



# STIC Search Report

## EIC 1700

STIC Database Tracking Number: 111997

TO: Elizabeth McKane  
Location: REM 6D70  
Art Unit : 1745  
January 15, 2004

Case Serial Number: 09/936124

From: John Calve  
Location: EIC 1700  
CP3/4-3D62  
Phone: 308-4139

John.Calve@uspto.gov

### Search Notes

Also -  
see cl 106/14.05<sup>+</sup>

=> file reg

FILE 'REGISTRY' ENTERED AT 11:24:05 ON 15 JAN 2004  
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Property values tagged with IC are from the ZIC/VINITI data file  
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STRUCTURE FILE UPDATES: 13 JAN 2004 HIGHEST RN 637299-19-5  
DICTIONARY FILE UPDATES: 13 JAN 2004 HIGHEST RN 637299-19-5

TSCA INFORMATION NOW CURRENT THROUGH JULY 14, 2003

Please note that search-term pricing does apply when  
conducting SmartSELECT searches.

Crossover limits have been increased. See HELP CROSSOVER for details.

Experimental and calculated property data are now available. For more  
information enter HELP PROP at an arrow prompt in the file or refer  
to the file summary sheet on the web at:  
<http://www.cas.org/ONLINE/DBSS/registryss.html>

=> d his

(FILE 'HOME' ENTERED AT 11:05:58 ON 15 JAN 2004)

FILE 'LREGISTRY' ENTERED AT 11:06:44 ON 15 JAN 2004

L1 STR

FILE 'REGISTRY' ENTERED AT 11:07:24 ON 15 JAN 2004

L2 50 S L1

L3 STR L1

L4 1 S L3

L5 STR L3

L6 50 S L5

L7 7983 S L6 FULL

SAVE L7 MCKANE000/A

FILE 'HCA' ENTERED AT 11:11:06 ON 15 JAN 2004

L8 7550 S L7

L9 23712 S ?FOUL? OR ANTI?(N)FOUL?

L10 22 S L8 AND L9

FILE 'LREGISTRY' ENTERED AT 11:13:01 ON 15 JAN 2004

L11 STR L5

L12 STR L11

FILE 'REGISTRY' ENTERED AT 11:18:11 ON 15 JAN 2004

L13 50 S L11 SSS SAM SUB=L7

FILE 'LREGISTRY' ENTERED AT 11:19:24 ON 15 JAN 2004

FILE 'REGISTRY' ENTERED AT 11:21:34 ON 15 JAN 2004

L14 1702 S L11 SSS FULL SUB=L7

SAVE L14 MCKANE000A/A

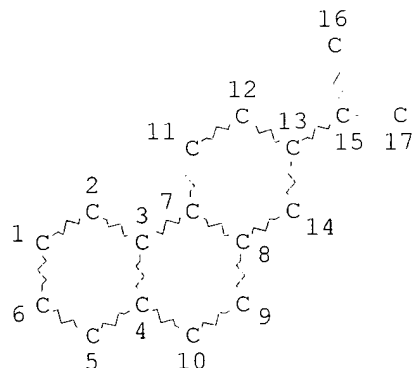
FILE 'HCA' ENTERED AT 11:23:01 ON 15 JAN 2004

L15 697 S L14  
L16 5 S L15 AND L9  
L17 17 S L10 NOT L16

FILE 'REGISTRY' ENTERED AT 11:24:05 ON 15 JAN 2004

=> d que stat L14

L5 STR



NODE ATTRIBUTES:

DEFAULT MLEVEL IS ATOM

DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:

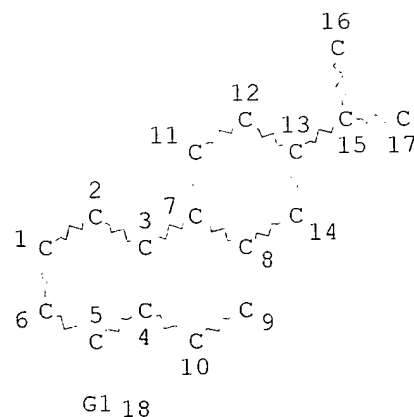
RSPEC 13

NUMBER OF NODES IS 17

STEREO ATTRIBUTES: NONE

L7 7983 SEA FILE=REGISTRY SSS FUL L5

L11 STR



G1 18

N  
21

REP G1=(0-5) C

NODE ATTRIBUTES:

DEFAULT MLEVEL IS ATOM

DEFAULT ECLEVEL IS LIMITED

## GRAPH ATTRIBUTES:

RSPEC 5

NUMBER OF NODES IS 19

## STEREO ATTRIBUTES: NONE

L14 1702 SEA FILE=REGISTRY SUB=L7 SSS FUL L11

100.0% PROCESSED 2430 ITERATIONS

1702 ANSWERS

SEARCH TIME: 00.00.01

=&gt; d L16 1-5 ibib abs hitind hitstr

YOU HAVE REQUESTED DATA FROM FILE 'HCA' - CONTINUE? (Y)/N:n

=&gt; file hca

FILE 'HCA' ENTERED AT 11:24:58 ON 15 JAN 2004

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FILE COVERS 1907 - 8 Jan 2004 VOL 140 ISS 3

FILE LAST UPDATED: 8 Jan 2004 (20040108/ED)

This file contains CAS Registry Numbers for easy and accurate substance identification.

=&gt; d L16 1-5 ibib abs hitind hitstr

L16 ANSWER 1 OF 5 HCA COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 133:253951 HCA

TITLE: Rosin amine **antifouling** agents

INVENTOR(S): Kunisch, Franz; Kugler, Martin; Braekman, Jean-claude;

Plehiers, Mark; Ferrari, Gabriele M.; Vos, Marcel

PATENT ASSIGNEE(S): Bayer Aktiengesellschaft, Germany; Universite Libre de

Bruxelles; Nederlandse Organisatie voor Toegepast

Natuurwetenschappelijk Onderzoek; Sigma Coatings B.V.

SOURCE: Eur. Pat. Appl., 14 pp.

CODEN: EPXXDW

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

*Same inventors*

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 1036786	A1	20000920	EP 1999-105349	19990316
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
WO 2000055117	A1	20000921	WO 2000-EP2118	20000310
W: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
EP 1163210	A1	20011219	EP 2000-910806	20000310
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
JP 2002539184	T2	20021119	JP 2000-605548	20000310
NZ 514174	A	20030429	NZ 2000-514174	20000310
ZA 2001006885	A	20020821	ZA 2001-6885	20010821
PRIORITY APPLN. INFO.:			EP 1999-105349	A 19990316
			WO 2000-EP2118	W 20000310

OTHER SOURCE(S): MARPAT 133:253951

AB Specified rosin amine compds. are useful for preventing the attachment of aquatic organisms to surfaces which are submerged for extensive periods of time in water. N-formyl rosinamine was prepared from dehydroabietylamine (Amine D) and Et formate, then reacted with diisopropylamine to give the **antifouling** agent rosin isocyanide.

IC ICM C07C233-02

ICS C09D005-16; C07C331-24; C07C265-08

CC 42-5 (Coatings, Inks, and Related Products)

ST rosin amine **antifouling** agentIT **Antifouling** agents(rosin amine **anti-fouling** agents)

IT 12698-87-2DP, Rosin Amine D, reaction products with isocyanates

RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)

(rosin amine **anti-fouling** agents)

IT 109-94-4DP, Ethyl formate, reaction products with Rosin Amine D

RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(rosin amine **anti-fouling** agents)

IT 108-18-9D, Diisopropylamine, reaction products with Rosin Amine D

**1446-61-3**, Dehydroabietylamine 6160-65-2D, Thiocarbonyl

diimidazole, reaction products with Rosin Amine D

RL: RCT (Reactant); RACT (Reactant or reagent)

(rosin amine **anti-fouling** agents)IT **1446-61-3**, Dehydroabietylamine

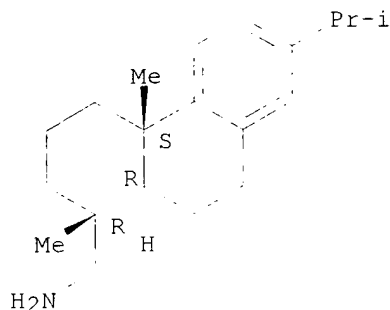
RL: RCT (Reactant); RACT (Reactant or reagent)

(rosin amine **anti-fouling** agents)

RN 1446-61-3 HCA

CN 1-Phenanthrenemethanamine, 1,2,3,4,4a,9,10,10a-octahydro-1,4a-dimethyl-7-(1-methylethyl)-, (1R,4aS,10aR)- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).



REFERENCE COUNT: 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L16 ANSWER 2 OF 5 HCA COPYRIGHT 2004 ACS on STN  
 ACCESSION NUMBER: 127:177775 HCA  
 TITLE: Triphenylborane-rosin amine adduct and use of the same  
 INVENTOR(S): Shimada, Akira; Kohara, Masanori; Shibuya, Yoshifumi; Hidaka, Yasuhiro  
 PATENT ASSIGNEE(S): Yoshitomi Fine Chemicals, Ltd., Japan; Shimada, Akira; Kohara, Masanori; Shibuya, Yoshifumi; Hidaka, Yasuhiro  
 SOURCE: PCT Int. Appl., 100 pp.  
 CODEN: PIXXD2  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9727254	A1	19970731	WO 1997-JP176	19970127
W: CN, JP, KR, NO, SG, US				
RW: AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
<u>EP 877061</u>	A1	19981111	EP 1997-900783	19970127
R: BE, DE, DK, ES, FR, GB, GR, IT, NL, SE, PT, FI				
CN 1214067	A	19990414	CN 1997-193225	19970127
NO 9803388	A	19980925	NO 1998-3388	19980722
PRIORITY APPLN. INFO.:			JP 1996-11339	19960126
			JP 1996-147602	19960610
			WO 1997-JP176	19970127

AB A triphenylborane-rosin amine adduct exhibiting an excellent **antifouling** effect on the adhesion of coelenterates and other aquatic organisms. The above-mentioned effect can be also achieved by using the title compound together with 1,3-dicyanotetrachlorobenzene, 2-(thiocyano-methylthio)benzothiazole, tetraalkylthiuram disulfides, 2,3-dichloromaleimides, phenols, dialkyl polysulfides, polybutene, paraffins or vaseline. Thus, a coating was prepared from a mixture of a reaction product of sodium hydroxide adduct of triphenylborane and dehydroabietylamine 10, LV 50 (polybutene) 5, glycerin 5, LR 155 (acrylic polymer) 20 and xylene 60-.

IC ICM C09D005-14  
 ICS C08K005-55; C07F005-02

CC 42-10 (Coatings, Inks, and Related Products)  
 Section cross-reference(s): 5

ST **antifouling** agent triphenylborane rosin amine adduct; polybutene acrylic polymer coating **antifouling**; marine **antifouling**

coating rosin amine adduct; shellfish **antifouling** coating  
triphenylborane adduct

IT Marine algae  
Marine animal  
Shellfish  
(**antifouling** coatings for; triphenylborane-rosin amine adduct  
and use of the same)

IT Coating materials  
(**antifouling**; triphenylborane-rosin amine adduct and use of  
the same)

IT 193825-39-7P 193825-41-1P 193825-42-2P  
193825-43-3P 193825-44-4P 193825-46-6P  
193825-50-2P  
RL: IMF (Industrial manufacture); MOA (Modifier or additive use); PREP  
(Preparation); USES (Uses)  
(**antifouling** agents, coatings containing; triphenylborane-rosin  
amine adduct and use of the same)

IT 960-71-4, Triphenylborane 1446-61-3, Dehydroabietylamine  
12698-87-2, Rosin amine D  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(triphenylborane-rosin amine adduct and use of the same)

IT 193825-39-7P 193825-41-1P 193825-42-2P  
193825-43-3P 193825-44-4P 193825-46-6P  
193825-50-2P  
RL: IMF (Industrial manufacture); MOA (Modifier or additive use); PREP  
(Preparation); USES (Uses)  
(**antifouling** agents, coatings containing; triphenylborane-rosin  
amine adduct and use of the same)

RN 193825-39-7 HCA

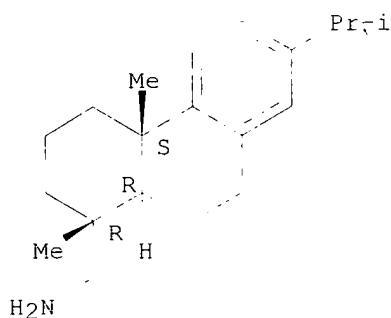
CN 1-Phenanthrenemethanamine, 1,2,3,4,4a,9,10,10a-octahydro-1,4a-dimethyl-7-  
(1-methylethyl)-, [1R-(1 $\alpha$ ,4 $\alpha$  $\beta$ ,10 $\alpha$ )]-, compd. with  
triphenylborane (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 1446-61-3

CMF C20 H31 N

Absolute stereochemistry. Rotation (+).

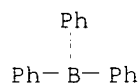


CM 2

CRN 960-71-4

CMF C18 H15 B

28  
when  $n=0$   
 $R_1 = NR_2R_3$   
 ~~$R_2, R_3 = H$~~   
 $R_2, R_3 = H$



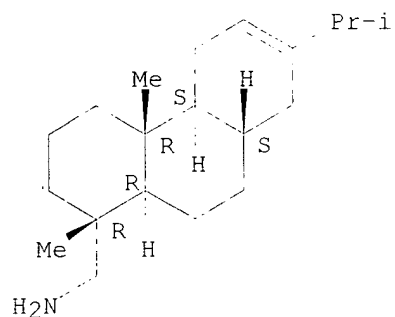
RN 193825-41-1 HCA  
CN 1-Phenanthrenemethanamine, 1,2,3,4,4a,4b,5,8,8a,9,10,10a-dodecahydro-1,4a-dimethyl-7-(1-methylethyl)-, [1R-(1 $\alpha$ ,4a $\beta$ ,4b $\alpha$ ,8a $\beta$ ,10a $\alpha$ )]-, compd. with triphenylborane (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 193825-40-0

CMF C20 H35 N

Absolute stereochemistry.

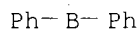


CM 2

CRN 960-71-4

CMF C18 H15 B

Ph



RN 193825-42-2 HCA  
CN 1-Phenanthrenemethanamine, 1,2,3,4,4a,4b,5,6,7,9,10,10a-dodecahydro-1,4a-dimethyl-7-(1-methylethyl)-, [1R-(1 $\alpha$ ,4a $\beta$ ,4b $\alpha$ ,7 $\alpha$ ,10a $\alpha$ )]-, compd. with triphenylborane (1:1) (9CI) (CA INDEX NAME)

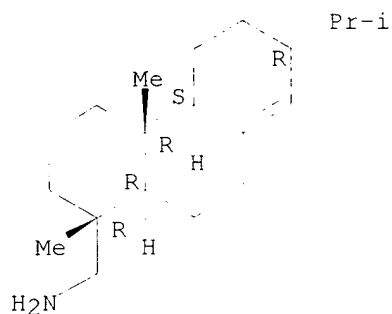
CM 1

CRN 57586-73-9

CMF C20 H35 N

Absolute stereochemistry.





II when  $n=0$

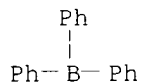
$R_1 = NR_2R_3$

$R_2R_3 = H$

CM 2

CRN 960-71-4

CMF C18 H15 B



RN 193825-43-3 HCA

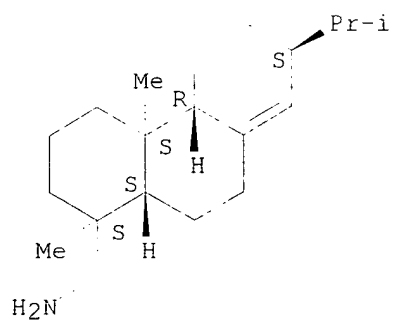
CN 1-Phenanthrenemethanamine, 1,2,3,4,4a,4b,5,6,7,9,10,10a-dodecahydro-1,4a-dimethyl-7-(1-methylethyl)-, [1S-(1 $\alpha$ ,4a $\beta$ ,4b $\alpha$ ,7 $\alpha$ ,10a $\alpha$ )]-, compd. with triphenylborane (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 47117-13-5

CMF C20 H35 N

Absolute stereochemistry.

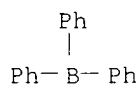


II as above

CM 2

CRN 960-71-4

CMF C18 H15 B



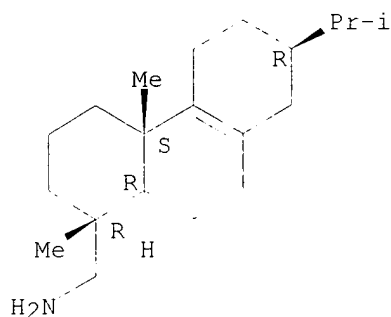
RN 193825-44-4 HCA  
CN 1-Phenanthrenemethanamine, 1,2,3,4,4a,5,6,7,8,9,10,10a-dodecahydro-1,4a-dimethyl-7-(1-methylethyl)-, [1R-(1 $\alpha$ ,4 $\alpha$  $\beta$ ,7 $\beta$ ,10 $\alpha$ )]-, compd. with triphenylborane (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 39776-05-1

CMF C20 H35 N

Absolute stereochemistry.

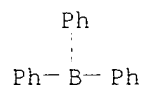


*l10 when n=0*  
*R1 = NH2*

CM 2

CRN 960-71-4

CMF C18 H15 B

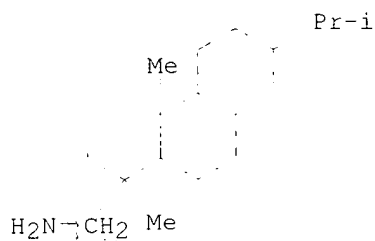


RN 193825-46-6 HCA  
CN 1-Phenanthrenemethanamine, tetradecahydro-1,4a-dimethyl-7-(1-methylethyl)-, compd. with triphenylborane (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 35102-92-2

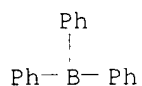
CMF C20 H37 N



21/24  
when  $n=1$   
 $R1 = NH2$

CM 2

CRN 960-71-4  
CMF C18 H15 B

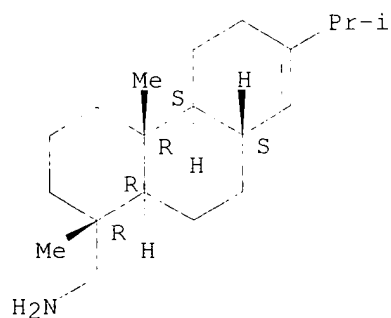


RN 193825-50-2 HCA  
CN 1-Phenanthrenemethanamine, 1,2,3,4,4a,4b,5,6,8a,9,10,10a-dodecahydro-1,4a-dimethyl-7-(1-methylethyl)-, [1R-(1 $\alpha$ ,4 $\alpha$  $\beta$ ,4b $\alpha$ ,8 $\alpha$  $\beta$ ,10 $\alpha$  $\alpha$ )]-, compd. with triphenylborane (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 47117-10-2  
CMF C20 H35 N

Absolute stereochemistry.



CM 2

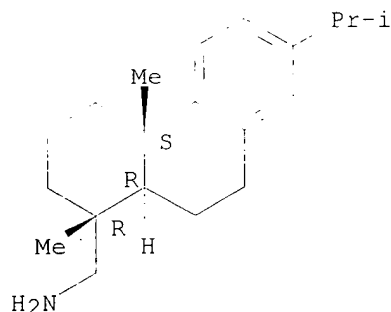
CRN 960-71-4  
CMF C18 H15 B

Ph

Ph B Ph

IT 1446-61-3, Dehydroabietylamine  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(triphenylborane-rosin amine adduct and use of the same)  
RN 1446-61-3 HCA  
CN 1-Phenanthrenemethanamine, 1,2,3,4,4a,9,10,10a-octahydro-1,4a-dimethyl-7-(1-methylethyl)-, (1R,4aS,10aR)- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).



*l8 when n=0*  
*R1 = NH2*

L16 ANSWER 3 OF 5 HCA COPYRIGHT 2004 ACS on STN  
ACCESSION NUMBER: 122:291843 HCA  
TITLE: Copolymers containing rosin moiety, their manufacture, and antifouling marine coatings  
INVENTOR(S): Tanioku, Katsuzo; Aibe, Hiroshi  
PATENT ASSIGNEE(S): Arakawa Chem Ind, Japan  
SOURCE: Jpn. Kokai Tokkyo Koho, 5 pp.  
CODEN: JKXXAF  
DOCUMENT TYPE: Patent  
LANGUAGE: Japanese  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 06313011	A2	19941108	JP 1993-127896	19930430
JP 3368618	B2	20030120		

PRIORITY APPLN. INFO.: JP 1993-127896 19930430

AB The title copolymers comprise N-rosin residue-substituted maleimide units and ethylenic unsatd. monomer-maleic anhydride (I) units and are manufactured by reacting rosin amines and I copolymers followed by imidation of anhydrous rings in the copolymers. Thus, heating 120 parts Amine D in 200 parts xylene at 50°, adding dropwisely 100 parts styrene-maleic anhydride copolymer dissolved in 200 parts xylene, treating at 120° under removing water, and heating at 200° and 100 mmHg gave 200 parts a fine yellow resin with number average mol. weight 4400 and acid value 25, 30

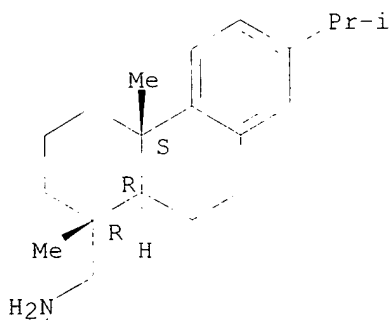
parts of which was blended with 70 parts THF, applied to a steel plate, dried for 1 day, and immersed in the sea for 6 mo to show no **fouling**.

IC ICM C08F222-40  
ICS C08F008-32; C09D005-14; C09D135-00  
CC 35-7 (Chemistry of Synthetic High Polymers)  
Section cross-reference(s): 42

ST maleic anhydride copolymer marine coating; rosin amine copolymer imidation marine coating; **antifouling** marine coating rosin maleic

copolymer  
IT Coating materials  
    (antifouling, marine antifouling coating containing  
    copolymer with rosin moiety)  
IT Amines, preparation  
    RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or  
    engineered material use); PREP (Preparation); USES (Uses)  
    (rosin alkyl, reaction products with styrene-maleic anhydride  
    copolymer, imidized; marine antifouling coating containing  
    copolymer with rosin moiety)  
IT 163265-23-4DP, imidized 163265-24-5DP, imidized  
    163265-25-6DP, imidized  
    RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or  
    engineered material use); PREP (Preparation); USES (Uses)  
    (marine antifouling coating containing copolymer with rosin  
    moiety)  
IT 163265-23-4DP, imidized 163265-24-5DP, imidized  
    163265-25-6DP, imidized  
    RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or  
    engineered material use); PREP (Preparation); USES (Uses)  
    (marine antifouling coating containing copolymer with rosin  
    moiety)  
RN 163265-23-4 HCA  
CN 2,5-Furandione, polymer with ethenylbenzene and [1R-  
    (1 $\alpha$ , 4 $\alpha$ , 10 $\alpha$ )]-1,2,3,4,4a,9,10,10a-octahydro-1,4a-  
    dimethyl-7-(1-methylethyl)-1-phenanthrenemethanamine (9CI) (CA INDEX  
    NAME)  
  
CM 1  
  
CRN 1446-61-3  
CMF C20 H31 N

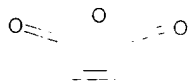
Absolute stereochemistry. Rotation (+).



*l8 when n=0*  
*R1 = NH<sub>2</sub>*

CM 2

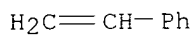
CRN 108-31-6  
CMF C4 H2 O3



CM 3

CRN 100-42-5

CMF C8 H8



RN 163265-24-5 HCA

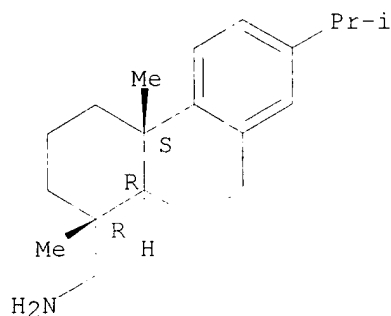
CN Acetic acid ethenyl ester, polymer with 2,5-furandione and  
[1R-(1 $\alpha$ ,4 $\alpha$ ,10 $\alpha$ )]-1,2,3,4,4a,9,10,10a-octahydro-1,4a-  
dimethyl-7-(1-methylethyl)-1-phenanthrenemethanamine (9CI) (CA INDEX  
NAME)

CM 1

CRN 1446-61-3

CMF C20 H31 N

Absolute stereochemistry. Rotation (+).



CM 2

CRN 108-31-6

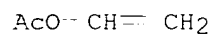
CMF C4 H2 O3



CM 3

CRN 108-05-4

CMF C4 H6 O2



RN 163265-25-6 HCA

CN 2,5-Furandione, polymer with 2-methyl-1,3-butadiene and

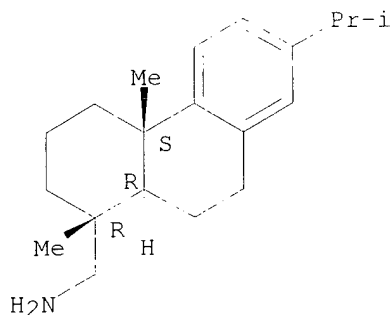
[1R-(1 $\alpha$ ,4 $\alpha$ ,10 $\alpha$ )]-1,2,3,4,4a,9,10,10a-octahydro-1,4a-dimethyl-7-(1-methylethyl)-1-phenanthrenemethanamine (9CI) (CA INDEX NAME)

CM 1

CRN 1446-61-3

CMF C20 H31 N

Absolute stereochemistry. Rotation (+).



CM 2

CRN 108-31-6

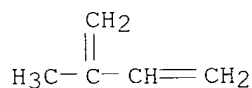
CMF C4 H2 O3



CM 3

CRN 78-79-5

CMF C5 H8



L16 ANSWER 4 OF 5 HCA COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 120:79649 HCA

TITLE: **Antifouling** coatings containing amine biocides/binders

INVENTOR(S): Hunter, Julian E.; Reid, James; Arnold, David E. J.; Hails, George; Baxter, Kenneth F.

PATENT ASSIGNEE(S): Courtaulds Coatings (Holdings) Ltd., UK

SOURCE: U.S., 6 pp. Cont.-in-part of U.S. 5,116,407.

CODEN: USXXAM

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 3  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 5236493	A	19930817	US 1991-684645	19910412
US 5116407	A	19920526	US 1989-418852	19891010
CN 1088238	A	19940622	CN 1993-119120	19931011
CN 1032864	B	19960925		
NO 9403208	A	19900417	NO 1994-3208	19940830
FI 9503471	A	19950718	FI 1995-3471	19950718
PRIORITY APPLN. INFO.:			GB 1988-24003	A 19881013
			GB 1989-10970	A 19890512
			US 1989-418852	A2 19891010
			FI 1989-4837	A 19891012
			NO 1989-40793	A 19891012

OTHER SOURCE(S): MARPAT 120:79649

AB Coatings with good long-term **antifouling** properties contain NR1R2R3 (R1 = diterpene hydrocarbyl, R2, R3 = H, C1-18 alkyl, or C6-12 aryl) salts of rosin or maleated or fumarated rosin as the biocide/binder. A typical coating contained Rosin Amine D (dehydroabietylamine) 30, rosin 20, and Shellsol 50 volume%.

IC ICM C09D005-14

NCL 106016000

CC 42-10 (Coatings, Inks, and Related Products)  
Section cross-reference(s): 5

ST **antifouling** coating rosin amine salt; fumarated rosin amine salt **antifouling** coating; maleated rosin amine salt **antifouling** coating; dehydroabietylamine rosin salt **antifouling** coating

IT Polyamines  
RL: USES (Uses)  
(salts with rosin, for binders/biocides, for **antifouling** coatings)

IT Coating materials  
(**antifouling**, containing amine-rosin salts as biocides/binders)

IT **Fouling** control agents  
(coatings, containing amine-rosin salts as biocides/binders)

IT Amines, compounds  
RL: USES (Uses)  
(coco alkyl, salts, with rosin, for binders/biocides, for **antifouling** coatings)

IT Resin acids and Rosin acids  
RL: USES (Uses)  
(salts, with diterpene-based amines, as binders/biocides for **antifouling** coatings)

IT 1314-13-2, Zinc oxide, uses  
RL: USES (Uses)  
(coatings containing amine-rosin salts and cuprous oxide and, **antifouling**)

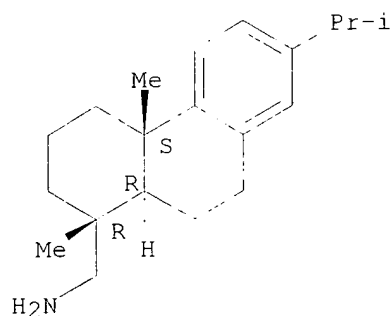
IT 1317-39-1, Cuprous oxide, uses  
RL: USES (Uses)  
(coatings containing amine-rosin salts and, **antifouling**)

IT 108-31-6D, Maleic anhydride, reaction products with rosin, salts with diterpene-based amines 110-17-8D, Fumaric acid, reaction products with rosin, salts with diterpene-based amines **1446-61-3D**, Dehydroabietylamine, salts with rosin 12698-87-2D, Rosin Amine D, salts with rosin  
RL: TEM (Technical or engineered material use); USES (Uses)



(coatings, **antifouling**)  
IT 124-40-3D, coco derivs., salts with rosin  
RL: USES (Uses)  
(for binders/biocides, for **antifouling** coatings)  
IT 1446-61-3D, Dehydroabietylamine, salts with rosin  
RL: TEM (Technical or engineered material use); USES (Uses)  
(coatings, **antifouling**)  
RN 1446-61-3 HCA  
CN 1-Phenanthrenemethanamine, 1,2,3,4,4a,9,10,10a-octahydro-1,4a-dimethyl-7-(1-methylethyl)-, (1R,4aS,10aR)- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).



L16 ANSWER 5 OF 5 HCA COPYRIGHT 2004 ACS on STN  
ACCESSION NUMBER: 116:7986 HCA  
TITLE: **Antifouling** coating compositions  
INVENTOR(S): Green, Georgina Elizabeth; Reid, James; Arnold, David  
Edward James; Hunter, Julian Edward  
PATENT ASSIGNEE(S): Courtaulds Coatings (Holdings) Ltd., UK  
SOURCE: PCT Int. Appl., 21 pp.  
CODEN: PIXXD2  
DOCUMENT TYPE: Patent  
LANGUAGE: English  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9115546	A1	19911017	WO 1991-GB561	19910409
W: JP, KR, NO, US				
RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LU, NL, SE				
EP 530205	A1	19930310	EP 1991-907604	19910409
R: DE, DK, ES, FR, GB, GR, IT, NL, SE				
JP 05507947	T2	19931111	JP 1991-506991	19910409
ES 2067228	T3	19950316	ES 1991-907604	19910409
CN 1055940	A	19911106	CN 1991-102406	19910410
PRIORITY APPLN. INFO.:			GB 1990-8053	19900410
			WO 1991-GB561	19910409

AB The title coatings comprise a biocide and a hydrolyzable resin binder having  $\geq 1$  pendant -X(OMR) $\times$  group, where X = CO, SO<sub>2</sub>, OPOH, PO; M = metal of valence 2,  $\times$  = 1 or 2; and R = monobasic organic residue, and nonvolatile amine which reduces the viscosity of solns. of the binder. A 4:1 xylene/butanol solution of methacrylic acid-acrylate copolymer having pendant -CO<sub>2</sub>CuO<sub>2</sub>CR<sub>1</sub> group, where R<sub>1</sub> is derived from high boiling acid, was

mixed (21.52) with Rosin Amine D 5.03, cuprous oxide 46.55, xylene 8.36, MIBK 10.46, and other ingredients 8.09% at resin/amine volume ratio 56:44 and applied to primed steel panels to give coatings showing no **fouling** after 12 mo. in seawater.

IC ICM C09D005-14

CC 42-7 (Coatings, Inks, and Related Products)

Section cross-reference(s): 5, 61

ST **antifouling** coating hydrolyzable resin; copper contg binder coating; amine complex binder coating; biocide binder coating

**antifouling**

IT Coating materials

(**antifouling**, marine, hydrolyzable copper-containing resin and biocide)

IT **Fouling** control agents

(coatings, marine, hydrolyzable copper-containing resin and biocide)

IT 1317-39-1, Cuprous oxide, uses

RL: USES (Uses)

(biocide, for **antifouling** coating)

IT 79-10-7D, 2-Propenoic acid, esters, polymer with methacrylic acid, copper complex, compound with amine 79-41-4D, polymer with acrylates, copper complex, compound with amine **1446-61-3D**, Abietylamine, dehydro, compound with copper complex of methacrylic polymer 7440-50-8D, Copper, salt, complex with methacrylic acid copolymer, compound with amine 12698-87-2D, Rosin Amine D, compound with copper complex of methacrylic polymer

RL: USES (Uses)

(coating binder, **antifouling**, marine)

IT **1446-61-3D**, Abietylamine, dehydro, compound with copper complex of methacrylic polymer

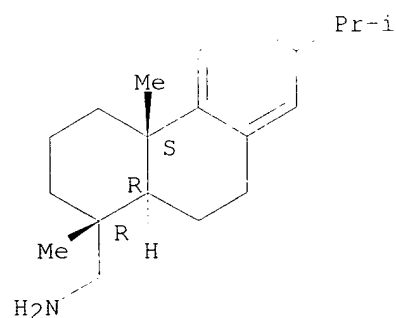
RL: USES (Uses)

(coating binder, **antifouling**, marine)

RN 1446-61-3 HCA

CN 1-Phenanthrenemethanamine, 1,2,3,4,4a,9,10,10a-octahydro-1,4a-dimethyl-7-(1-methylethyl)-, (1R,4aS,10aR)- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).



l 8 when n=0

R1 = NH2

=> d L17 1-17 ibib abs hitind hitstr

L17 ANSWER 1 OF 17 HCA COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 139:232031 HCA

TITLE: **Antifouling** coating composition, coating film, underwater material covered with the coating

INVENTOR(S): film, and **antifouling** coating method  
 Oya, Masaaki; Nakamura, Naoya; Tsuboi, Makoto  
 PATENT ASSIGNEE(S): Chugoku Marine Paints, Ltd., Japan  
 SOURCE: Eur. Pat. Appl., 49 pp.  
 CODEN: EPXXDW  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

*bad data*

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 1342756	A1	20030910	EP 2003-251373	20030306
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK				
JP 2003261816	A2	20030919	JP 2002-60696	20020306
US 2003207962	A1	20031106	US 2003-375005	20030228
NO 2003001003	A	20030908	NO 2003-1003	20030304
CN 1442461	A	20030917	CN 2003-120256	20030306
PRIORITY APPLN. INFO.:		JP 2002-60696 A 20020306		

AB An **antifouling** coating composition comprises (A) a silyl ester copolymer containing constituent units derived from a polymerizable unsatd. carboxylic acid silyl ester, (B) a carboxylic acid, (C) a bivalent or trivalent metal compound, optional other **antifoulant**, and (D) a dehydrating agent, such that there is salt formation between ingredients B and C to promote reduced binder hydrolysis. An example coating contained 2.3 parts isononanoic acid, 6 parts ZnO, 20 parts copolymer solution (preparation given), 44 parts cuprous oxide, 3 parts 2-pyridinethiol 1-oxide copper salt, 2 parts TiO<sub>2</sub>, 2 parts anhydrous gypsum, 1.5 parts Disparlon 4200-20, 4 parts Disparlon A-603-20X, and 12.7 parts xylene.

IC ICM C09D005-16  
 CC 42-10 (Coatings, Inks, and Related Products)  
 Section cross-reference(s): 61  
 ST crack resistance epoxy alkylsilyl acrylate polymer **antifouling** coating  
 IT Naphthenic acids, uses  
 RL: TEM (Technical or engineered material use); USES (Uses)  
 (**antifouling** cracking-resistant coating composition based on silyl ester copolymer with good adhesion to coated substrate)  
 IT Coating materials  
 (**antifouling**, marine; **antifouling** cracking-resistant coating composition based on silyl ester copolymer with good adhesion to coated substrate)  
 IT Fatty acids, uses  
 RL: TEM (Technical or engineered material use); USES (Uses)  
 (branched; **antifouling** cracking-resistant coating composition based on silyl ester copolymer with good adhesion to coated substrate)  
 IT Rosin  
 RL: TEM (Technical or engineered material use); USES (Uses)  
 (dehydrating agent; **antifouling** cracking-resistant coating composition based on silyl ester copolymer with good adhesion to coated substrate)  
 IT Carboxylic acids, uses  
 RL: MOA (Modifier or additive use); USES (Uses)  
 (salts; **antifouling** cracking-resistant coating composition based on silyl ester copolymer with good adhesion to coated substrate)  
 IT Fatty acids, uses

RL: TEM (Technical or engineered material use); USES (Uses)  
(soya; **antifouling** cracking-resistant coating composition based on  
silyl ester copolymer with good adhesion to coated substrate)

IT Fatty acids, uses  
RL: TEM (Technical or engineered material use); USES (Uses)  
(tall-oil; **antifouling** cracking-resistant coating composition  
based on silyl ester copolymer with good adhesion to coated substrate)

IT 971-66-4 1317-39-1, Cuprous oxide, uses 1897-45-6, 2,4,5,6-Tetrachloro  
isophthalonitrile 13167-25-4, N-(2,4,6-Trichlorophenyl)maleimide  
13463-41-7, 2-Pyridinethiol-1-oxide zinc salt 26656-82-6, Copper  
rhodanide 28159-98-0, 2-Methylthio-4-tert-butylamino-6-cyclopropylamino-  
s-triazine 64359-81-5, 4,5-Dichloro-2-octyl isothiazolin-3-one  
67412-55-9, n,n-Dimethyldichlorophenylurea 154592-20-8  
RL: MOA (Modifier or additive use); USES (Uses)  
(**antifoulant; antifouling** cracking-resistant  
coating composition based on silyl ester copolymer with good adhesion to  
coated substrate)

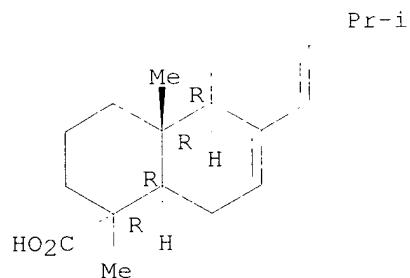
IT 116767-33-0P, Methyl methacrylate-tri(butyl)silyl methacrylate copolymer  
166441-72-1P, Ethyl acrylate-methyl methacrylate-tri(isopropyl)silyl  
acrylate copolymer 166441-77-6P, 2-Methoxyethyl acrylate-methyl  
methacrylate-tri(isopropyl)silyl acrylate copolymer 198013-64-8P, Methyl  
methacrylate-tri(isopropyl)silyl acrylate copolymer 280555-66-0P,  
2-Hydroxypropyl acrylate-methyl methacrylate-tri(isopropyl)silyl acrylate  
copolymer 280555-67-1P, Methyl methacrylate-tri(butyl)silyl  
methacrylate-tri(isopropyl)silyl acrylate copolymer 280555-68-2P,  
2-Hydroxybutyl acrylate-methyl methacrylate-tri(isopropyl)silyl acrylate  
copolymer 280555-81-9P, Methyl methacrylate-polyethylene glycol  
monomethacrylate-tri(isopropyl)silyl acrylate copolymer 280555-83-1P,  
N-Ethoxymethylacrylamide-methyl methacrylate-tri(isopropyl)silyl acrylate  
copolymer 405907-04-2P, Ethyl acrylate-methyl methacrylate-  
tri(isobutyl)silyl methacrylate copolymer 405907-05-3P, Ethyl  
acrylate-methyl methacrylate-di-sec-butylmethylsilyl methacrylate  
copolymer 405907-06-4P, Ethyl acrylate-methyl methacrylate-  
di(isopropyl)methylsilyl methacrylate copolymer 405907-07-5P  
RL: IMF (Industrial manufacture); TEM (Technical or engineered material  
use); PREP (Preparation); USES (Uses)  
(**antifouling** cracking-resistant coating composition based on silyl  
ester copolymer with good adhesion to coated substrate)

IT 60-33-3, Linoleic acid, uses 112-80-1, Oleic acid, uses 463-40-1,  
Linolenic acid **514-10-3**, Abietic acid 640-28-8, Agathenic acid  
1314-13-2, Zinc oxide, uses **1740-19-8**, Dehydroabietic acid  
**2221-96-7**, Dihydroabietic acid 7439-95-4, Magnesium, uses  
7440-39-3, Barium, uses 7440-50-8, Copper, uses 7440-66-6, Zinc, uses  
7440-70-2, Calcium, uses 7778-18-9, Anhydrous gypsum **25800-63-9**  
, Tetrahydroabietic acid 26896-18-4, Isononanoic acid 117536-59-1,  
Secodehydroabietic acid  
RL: TEM (Technical or engineered material use); USES (Uses)  
(**antifouling** cracking-resistant coating composition based on silyl  
ester copolymer with good adhesion to coated substrate)

IT **514-10-3**, Abietic acid **1740-19-8**, Dehydroabietic acid  
**2221-96-7**, Dihydroabietic acid **25800-63-9**,  
Tetrahydroabietic acid  
RL: TEM (Technical or engineered material use); USES (Uses)  
(**antifouling** cracking-resistant coating composition based on silyl  
ester copolymer with good adhesion to coated substrate)

RN 514-10-3 HCA  
CN 1-Phenanthrenecarboxylic acid, 1,2,3,4,4a,4b,5,6,10,10a-decahydro-1,4a-  
dimethyl-7-(1-methylethyl)-, (1R,4aR,4bR,10aR)- (9CI) (CA INDEX NAME)

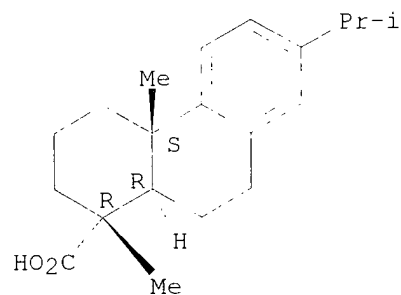
Absolute stereochemistry.



RN 1740-19-8 HCA

CN 1-Phenanthrenecarboxylic acid, 1,2,3,4,4a,9,10,10a-octahydro-1,4a-dimethyl-7-(1-methylethyl)-, (1R,4aS,10aR)- (9CI) (CA INDEX NAME)

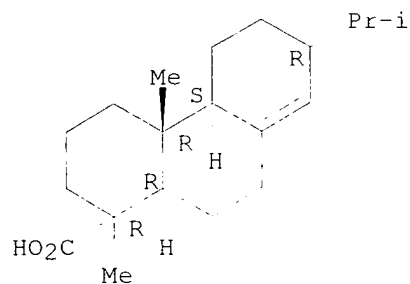
Absolute stereochemistry. Rotation (+).



RN 2221-96-7 HCA

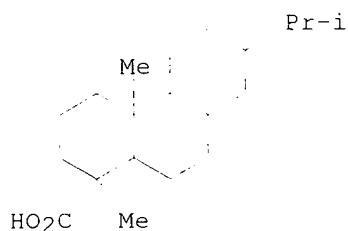
CN 1-Phenanthrenecarboxylic acid, 1,2,3,4,4a,4b,5,6,7,9,10,10a-dodecahydro-1,4a-dimethyl-7-(1-methylethyl)-, (1R,4aR,4bS,7R,10aR)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



RN 25800-63-9 HCA

CN 1-Phenanthrenecarboxylic acid, tetradecahydro-1,4a-dimethyl-7-(1-methylethyl)- (9CI) (CA INDEX NAME)



REFERENCE COUNT: 12 THERE ARE 12 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L17 ANSWER 2 OF 17 HCA COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 139:70486 HCA

TITLE: Production of acrylic resins used in

**antifouling** coating compositions

INVENTOR(S): Yamamori, Naoki; Higo, Kiyoaki; Matsuda, Masayuki

PATENT ASSIGNEE(S): Nippon Paint Co., Ltd., Japan; Nippon Paint Marine Coating Co., Ltd.

SOURCE: Eur. Pat. Appl., 20 pp.

CODEN: EPXXDW

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

*bad data*

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 1323745	A2	20030702	EP 2002-28942	20021224
EP 1323745	A3	20030813		

R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, SK

NO 2002006203	A	20030627	NO 2002-6203	20021223
JP 2003252931	A2	20030910	JP 2002-372778	20021224
US 2003139558	A1	20030724	US 2002-329605	20021226
CN 1432585	A	20030730	CN 2002-159303	20021226

PRIORITY APPLN. INFO.: JP 2001-395230 A 20011226

AB An acrylic resin has at least one group represented by the general formula (I)  $-C(O)-O-SiR_1R_2R_3$  in its side chain,  $R_1$ ,  $R_2$  and  $R_3$  being the same or different and each representing a hydrocarbon residue of 1 to 20 carbon atoms, and addnl. at least one group represented by the general formula (II)  $-(X)_n-C(O)-O-M-A$  in its side chain,  $X$  being a group represented by the formula  $-O-C(O)-Y-$ ,  $n$  being equal to 0 or 1,  $Y$  representing a hydrocarbon,  $M$  representing a divalent metal, and  $A$  representing a monobasic organic acid residue. The acrylic resins are used in **antifouling** coatings improved in such a manner that the coating film formed may retain a steady polishing rate over a long time period and be not ready to develop cracks and other defects, thus exhibiting an excellent long-term **antifouling** performance. Thus, acrylic acid-cyclohexyl methacrylate-Et acrylate-tributylsilyl acrylate copolymer was produced in xylene/butanol at 100° in the presence of tert-Bu peroxy-2-ethylhexanoate. An acrylic resin for **antifouling** coating was produced by reacting the copolymer (100) with zinc acetate (48.9) and hydrogenated rosin (78.1 parts) by refluxing in xylene/butanol for 18 h.

IC ICM C08F008-00

ICS C08F230-08; C09D005-16  
CC 42-7 (Coatings, Inks, and Related Products)  
ST acrylic resin divalent metal salt reaction product **antifouling**  
coating  
IT Naphthenic acids, uses  
RL: IMF (Industrial manufacture); POF (Polymer in formulation); PRP  
(Properties); TEM (Technical or engineered material use); PREP  
(Preparation); USES (Uses)  
(NA 165, reaction products with acid group-containing acrylic resins and  
divalent metal salts; production of acrylic resins used in  
**antifouling** coating compns.)  
IT Rosin  
RL: IMF (Industrial manufacture); POF (Polymer in formulation); PRP  
(Properties); TEM (Technical or engineered material use); PREP  
(Preparation); USES (Uses)  
(WW rosin, reaction products with acid group-containing acrylic resins and  
divalent metal salts; production of acrylic resins used in  
**antifouling** coating compns.)  
IT Coating materials  
(**antifouling**; production of acrylic resins used in  
**antifouling** coating compns.)  
IT Rosin  
RL: IMF (Industrial manufacture); POF (Polymer in formulation); PRP  
(Properties); TEM (Technical or engineered material use); PREP  
(Preparation); USES (Uses)  
(hydrogenated, reaction products with acid group-containing acrylic resins  
and divalent metal salts; production of acrylic resins used in  
**antifouling** coating compns.)  
IT Varnishes  
(production of acrylic resins used in **antifouling** coating  
compns.)  
IT Polymerization  
(radical; production of acrylic resins used in **antifouling**  
coating compns.)  
IT 75-98-9DP, Pivalic acid, reaction products with acid group-containing acrylic  
resins and divalent metal salts 142-71-2DP, Copper acetate, reaction  
products with acid group-containing acrylic resins and monobasic organic acids  
557-34-6DP, Zinc acetate, reaction products with acid group-containing acrylic  
resins and monobasic organic acids 198013-64-8DP, Methyl  
methacrylate-triisopropylsilyl acrylate copolymer, reaction products with  
copper acetate and pivalic acid 551939-98-1DP, reaction products with  
zinc acetate and hydrogenated rosin 551939-99-2DP, reaction products  
with copper acetate and hydrogenated rosin 551940-00-2DP, reaction  
products with copper acetate and rosin 551940-01-3DP, reaction products  
with copper acetate and hydrogenated rosin or naphthenic acids or pivalic  
acid 551940-02-4DP, reaction products with copper acetate and  
hydrogenated rosin 551940-03-5DP, reaction products with copper acetate  
and pivalic acid  
RL: IMF (Industrial manufacture); POF (Polymer in formulation); PRP  
(Properties); TEM (Technical or engineered material use); PREP  
(Preparation); USES (Uses)  
(production of acrylic resins used in **antifouling** coating  
compns.)  
IT **514-10-3DP**, Abietic acid, reaction products with acid group-containing  
acrylic resins and divalent metal salts **1740-19-8DP**,  
Dehydroabietic acid, reaction products with acid group-containing acrylic  
resins and divalent metal salts  
RL: IMF (Industrial manufacture); POF (Polymer in formulation); TEM

(Technical or engineered material use); PREP (Preparation); USES (Uses)  
(production of acrylic resins used in **antifouling** coating  
comps.)

IT 198013-64-8P, Methyl methacrylate-triisopropylsilyl acrylate copolymer  
551939-98-1P, Acrylic acid-cyclohexyl methacrylate-ethyl  
acrylate-tributylsilyl acrylate copolymer 551939-99-2P, Acrylic  
acid-cyclohexyl methacrylate-ethyl acrylate-methacrylic acid-NK Ester M  
90G-triisopropylsilyl acrylate copolymer 551940-00-2P, Acrylic  
acid-butyl acrylate-cyclohexyl acrylate-methyl methacrylate-NK Ester M  
90G-tributylsilyl acrylate copolymer 551940-01-3P 551940-02-4P,  
Acrylic acid-methyl methacrylate-triisopropylsilyl acrylate copolymer  
551940-03-5P

RL: IMF (Industrial manufacture); PRP (Properties); PREP (Preparation)  
(production of acrylic resins used in **antifouling** coating  
comps.)

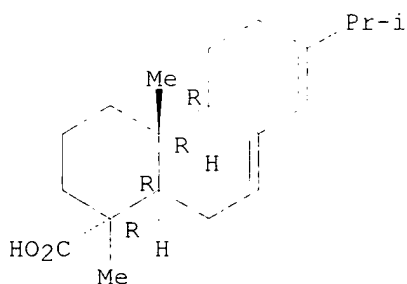
IT 514-10-3DP, Abietic acid, reaction products with acid group-containing  
acrylic resins and divalent metal salts 1740-19-8DP,  
Dehydroabietic acid, reaction products with acid group-containing acrylic  
resins and divalent metal salts

RL: IMF (Industrial manufacture); POF (Polymer in formulation); TEM  
(Technical or engineered material use); PREP (Preparation); USES (Uses)  
(production of acrylic resins used in **antifouling** coating  
comps.)

RN 514-10-3 HCA

CN 1-Phenanthrenecarboxylic acid, 1,2,3,4,4a,4b,5,6,10,10a-decahydro-1,4a-  
dimethyl-7-(1-methylethyl)-, (1R,4aR,4bR,10aR)- (9CI) (CA INDEX NAME)

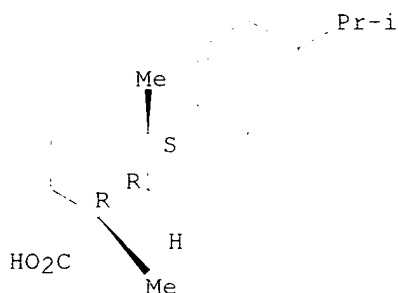
Absolute stereochemistry.



RN 1740-19-8 HCA

CN 1-Phenanthrenecarboxylic acid, 1,2,3,4,4a,9,10,10a-octahydro-1,4a-dimethyl-  
7-(1-methylethyl)-, (1R,4aS,10aR)- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).





L17 ANSWER 3 OF 17 HCA COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 136:169087 HCA

TITLE: Coating materials having durable **antifouling** properties and storage stability

INVENTOR(S): Okamoto, Satoshi; Yamamori, Naoki

PATENT ASSIGNEE(S): Nippon Paint Co., Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 8 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2002053797	A2	20020219	JP 2000-242262	20000810

PRIORITY APPLN. INFO.: JP 2000-242262 20000810

OTHER SOURCE(S): MARPAT 136:169087

AB Coating materials contain copolymers of 100 parts monomers containing 40-85 parts tri(isopropyl)silyl (meth)acrylate and amphoteric ionic compds. and/or salts thereof at copolymer-amphoteric ionic compds. and/or salts ratio 99.99:0.01-80-20. Thus, a coating material contained 30:30:30:10 Bu acrylate-Me methacrylate-tri(isopropyl)silyl acrylate-tri(isopropyl)silyl methacrylate copolymer (57% solids) 30, N-octadecyl-L-alanine 0.0018, dioctyl phthalate 4, Cu suboxide 40, 2-pyridinethiol-1-oxide Zn salt 3, N,N-dimethyldichlorophenylurea 2, red iron oxide 5, xylene 12, butanol 2, and colloidal silica 2 parts.

IC ICM C09D143-04

ICS C09D005-16; C09D157-00

CC 42-10 (Coatings, Inks, and Related Products)

Section cross-reference(s): 5

ST **antifouling** coating vinyl polymer amphoteric compd

IT Coating materials

(**antifouling**; coating materials having good  
**antifouling** properties and storage stability)

IT Amphoteric materials

(coating materials having good **antifouling** properties and  
storage stability)

IT Rosin

RL: MOA (Modifier or additive use); USES (Uses)

(coating materials having good **antifouling** properties and  
storage stability)

IT Resin acids

RL: MOA (Modifier or additive use); USES (Uses)

(copper salts; coating materials having good **antifouling**  
properties and storage stability)

IT Rosin

RL: MOA (Modifier or additive use); USES (Uses)

(hydrogenated; coating materials having good **antifouling**  
properties and storage stability)

IT Vinyl compounds, uses

RL: IMF (Industrial manufacture); POF (Polymer in formulation); PRP  
(Properties); TEM (Technical or engineered material use); PREP  
(Preparation); USES (Uses)

(polymers; coating materials having good **antifouling**  
properties and storage stability)

IT Polymerization  
(radical; coating materials having good **antifouling**  
properties and storage stability)

IT Storage  
(stability; coating materials having good **antifouling**  
properties and storage stability)

IT 166441-77-6P, Methoxyethyl acrylate-methyl methacrylate-  
tri(isopropyl)silyl acrylate copolymer 354806-32-9P, Butyl  
acrylate-2-methoxyethyl acrylate-methyl methacrylate-tri(isopropyl)silyl  
acrylate-tri(isopropyl)silyl methacrylate copolymer 396717-78-5P, Butyl  
acrylate-methyl methacrylate-tri(isopropyl)silyl acrylate-  
tri(isopropyl)silyl methacrylate copolymer  
RL: IMF (Industrial manufacture); POF (Polymer in formulation); PRP  
(Properties); TEM (Technical or engineered material use); PREP  
(Preparation); USES (Uses)  
(coating materials having good **antifouling** properties and  
storage stability)

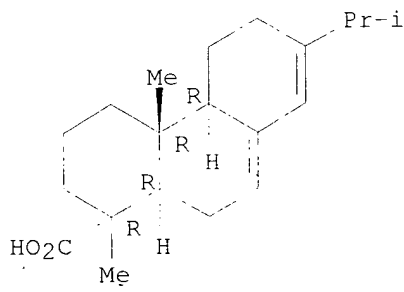
IT **514-10-3**, Abietic acid 7440-50-8D, Copper, rosinatate  
32214-00-9, L-Alanine, N-dodecyl- 65559-69-5, L-Alanine, N-octadecyl-  
65559-69-5D, nickel complex  
RL: MOA (Modifier or additive use); USES (Uses)  
(coating materials having good **antifouling** properties and  
storage stability)

IT **514-10-3**, Abietic acid  
RL: MOA (Modifier or additive use); USES (Uses)  
(coating materials having good **antifouling** properties and  
storage stability)

RN 514-10-3 HCA

CN 1-Phenanthrenecarboxylic acid, 1,2,3,4,4a,4b,5,6,10,10a-decahydro-1,4a-  
dimethyl-7-(1-methylethyl)-, (1R,4aR,4bR,10aR)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L17 ANSWER 4 OF 17 HCA COPYRIGHT 2004 ACS on STN  
ACCESSION NUMBER: 136:169086 HCA  
TITLE: Coating materials having durable **antifouling**  
properties and storage stability and recoatability  
INVENTOR(S): Okamoto, Satoshi; Yamamori, Naoki  
PATENT ASSIGNEE(S): Nippon Paint Co., Ltd., Japan  
SOURCE: Jpn. Kokai Tokkyo Koho, 7 pp.  
CODEN: JKXXAF  
DOCUMENT TYPE: Patent  
LANGUAGE: Japanese  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2002053796	A2	20020219	JP 2000-242261	20000810
PRIORITY APPLN. INFO.:			JP 2000-242261	20000810
AB	Coating materials contain copolymers of 100 parts monomers containing tri(isopropyl)silyl (meth)acrylate 55-75, methoxyethyl acrylate 2-20, and comonomers 5-43 parts and rosin compds. selected from ≥1 of rosin, hydrogenated rosin, rosin metal salts, abietic acid, and hydrogenated abietic acid at copolymer-rosin compound ratio 30:70-70:30. Thus, a coating material contained 20:25:50:5 methoxyethyl acrylate-Me methacrylate-tri(isopropyl)silyl acrylate-tri(isopropyl)silyl methacrylate copolymer (60% solids) 12, gum rosin 10.8, dioctyl phthalate 4, Cu suboxide 40, 2-pyridinethiol-1-oxide Zn salt 3, N,N-dimethyldichlorophenylurea 2, red iron oxide 5, xylene 19.2, butanol 2, and colloidal silica 2 parts.			
IC	ICM C09D143-04			
	ICS C09D005-16			
CC	42-10 (Coatings, Inks, and Related Products)			
	Section cross-reference(s): 5			
ST	<b>antifouling</b> coating vinyl polymer rosin			
IT	Coating materials ( <b>antifouling</b> ; coating materials having good <b>antifouling</b> properties and storage stability and recoatability)			
IT	Rosin RL: MOA (Modifier or additive use); USES (Uses) (coating materials having good <b>antifouling</b> properties and storage stability and recoatability)			
IT	Resin acids RL: MOA (Modifier or additive use); USES (Uses) (copper salts; coating materials having good <b>antifouling</b> properties and storage stability and recoatability)			
IT	Rosin RL: MOA (Modifier or additive use); USES (Uses) (hydrogenated; coating materials having good <b>antifouling</b> properties and storage stability and recoatability)			
IT	Vinyl compounds, uses RL: IMF (Industrial manufacture); POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses) (polymers; coating materials having good <b>antifouling</b> properties and storage stability and recoatability)			
IT	Polymerization (radical; coating materials having good <b>antifouling</b> properties and storage stability and recoatability)			
IT	Storage (stability; coating materials having good <b>antifouling</b> properties and storage stability and recoatability)			
IT	166441-77-6P, Methoxyethyl acrylate-methyl methacrylate-tri(isopropyl)silyl acrylate copolymer 354806-31-8P, Methoxyethyl acrylate-methyl methacrylate-tri(isopropyl)silyl acrylate-tri(isopropyl)silyl methacrylate copolymer RL: IMF (Industrial manufacture); POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses) (coating materials having good <b>antifouling</b> properties and storage stability and recoatability)			
IT	<b>514-10-3</b> , Abietic acid 7440-50-8D, Copper, rosinate			

RL: MOA (Modifier or additive use); USES (Uses)  
(coating materials having good **antifouling** properties and storage stability and recoatability)

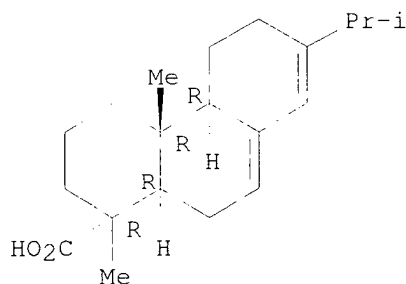
IT **514-10-3**, Abietic acid

RL: MOA (Modifier or additive use); USES (Uses)  
(coating materials having good **antifouling** properties and storage stability and recoatability)

RN 514-10-3 HCA

CN 1-Phenanthrenecarboxylic acid, 1,2,3,4,4a,4b,5,6,10,10a-decahydro-1,4a-dimethyl-7-(1-methylethyl)-, (1R,4aR,4bR,10aR)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L17 ANSWER 5 OF 17 HCA COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 135:290226 HCA

TITLE: Nontoxic marine **antifouling** coatings with low volatile organic compound (VOC) content

INVENTOR(S): Yamamori, Naoki; Okamoto, Satoshi; Higo, Kiyoaki; Matsuda, Masayuki

PATENT ASSIGNEE(S): Nippon Paint Co., Ltd., Japan

SOURCE: Eur. Pat. Appl., 22 pp.

CODEN: EPXXDW

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 1138725	A1	20011004	EP 2001-302569	20010320
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
JP 2001342421	A2	20011214	JP 2000-334417	20001101
JP 2002241676	A2	20020828	JP 2001-45740	20010221
NO 2001001556	A	20011001	NO 2001-1556	20010327
CN 1318602	A	20011024	CN 2001-112402	20010328
US 2002011177	A1	20020131	US 2001-818733	20010328
PRIORITY APPLN. INFO.:			JP 2000-88292	A 20000328
			JP 2000-334417	A 20001101
			JP 2001-45740	A 20010221

AB The coatings comprise a varnish from metal-containing acrylic resin bearing -(X)nC(O)OMAm pendants (X = OCOY; n = 0 or 1; Y = hydrocarbylene group; M = metal compound having valency of m+1; A = an organic acid residue derived from a monobasic acid) which has a nonvolatile fraction of not less than 40% and a viscosity at 25° of not more than 18 P, where the VOC

content of the coatings is not more than 400 g/L. Thus, preparing an acrylic resin from Bu acrylate, Et acrylate and acrylic acid, heating the resulting resin 100 with WW Rosin (a com. rosin having acid number 160 mg-KOH/g) 1.47, Cu acetate monohydrate 26.6 and xylene 120 g at reflux while distilling off a mixture of AcOH, water and xylene and supplying xylene for 10 h, and adjusting the resulting varnish with 10 g of BuOH and xylene gave a varnish with nonvolatile fraction 50% and viscosity at 25° of 12 P. Mixing 50 parts the varnish with Cu suboxide 39, Zn pyrithione 5, colloidal silica 2 and red Fe oxide 4 parts gave an **antifouling** coating with sp. gr. 1.4, solvent content 25%, VOC 350 and viscosity (KU value) 80.

IC ICM C09D005-16

CC 42-7 (Coatings, Inks, and Related Products)

ST marine **antifouling** coating acrylic acid polymer salt monobasic carboxylate; acrylic acid polymer rosin ester metal salt **antifouling** coating

IT Naphthenic acids, uses

RL: IMF (Industrial manufacture); POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(NA 165, NA 200, esters with acrylic acid copolymer salts; nontoxic marine **antifouling** coatings with low volatile organic compound (VOC) content)

IT Coating materials

(**antifouling**, marine; nontoxic marine **antifouling** coatings with low volatile organic compound (VOC) content)

IT Fatty acids, uses

RL: IMF (Industrial manufacture); POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(branched fatty acids, versatic acid, reaction products with acrylic acid copolymer salt; nontoxic marine **antifouling** coatings with low volatile organic compound (VOC) content)

IT Resin acids

RL: IMF (Industrial manufacture); POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(esters, with acrylic acid copolymer salts; nontoxic marine **antifouling** coatings with low volatile organic compound (VOC) content)

IT Resin acids

RL: IMF (Industrial manufacture); POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(hydrogenated, esters, with acrylic acid copolymer salts; nontoxic marine **antifouling** coatings with low volatile organic compound (VOC) content)

IT 112-80-1DP, Oleic acid, reaction products with acrylic acid copolymer salts 142-71-2DP, Copper acetate, compds. with acrylic acid copolymer and monobasic carboxylic acids **514-10-3DP**, Abietic acid, reaction products with acrylic acid copolymer esters 557-34-6DP, Zinc acetate, compds. with acrylic acid copolymer and monobasic carboxylic acids 25085-35-2DP, Acrylic acid-ethyl acrylate copolymer, reaction products with monobasic carboxylic acids, metal salts 27322-15-2DP, Acrylic acid-butyl acrylateethyl acrylate copolymer, reaction products with monobasic carboxylic acids, metal salts 61644-58-4DP, Acrylic acid-cyclohexyl acrylateethyl acrylate copolymer, reaction products with monobasic carboxylic acids, metal salts 364367-81-7DP, reaction products

with monobasic carboxylic acids, metal salts 364367-82-8DP, reaction products with monobasic carboxylic acids, metal salts 364367-83-9DP, reaction products with monobasic carboxylic acids, metal salts 364367-84-0DP, reaction products with monobasic carboxylic acids, metal salts 364367-86-2DP, reaction products with monobasic carboxylic acids, metal salts 364367-87-3DP, reaction products with monobasic carboxylic acids, metal salts 364591-00-4DP, reaction products with monobasic carboxylic acids, metal salts 364591-02-6DP, reaction products with monobasic carboxylic acids, metal salts 364591-04-8DP, reaction products with monobasic carboxylic acids, metal salts 364591-06-0DP, reaction products with monobasic carboxylic acids, metal salts 364591-08-2DP, reaction products with monobasic carboxylic acids, metal salts  
RL: IMF (Industrial manufacture); POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(nontoxic marine **antifouling** coatings with low volatile organic compound (VOC) content)

IT 514-10-3DP, Abietic acid, reaction products with acrylic acid copolymer esters

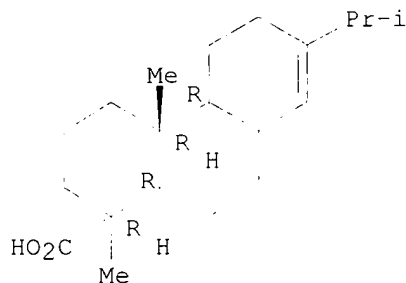
RL: IMF (Industrial manufacture); POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(nontoxic marine **antifouling** coatings with low volatile organic compound (VOC) content)

RN 514-10-3 HCA

CN 1-Phenanthrenecarboxylic acid, 1,2,3,4,4a,4b,5,6,10,10a-decahydro-1,4a-dimethyl-7-(1-methylethyl)-, (1R,4aR,4bR,10aR)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



REFERENCE COUNT: 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L17 ANSWER 6 OF 17 HCA COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 127:235793 HCA

TITLE: **Antifouling** coating compositions with storage stability

INVENTOR(S): Yonehara, Yoichi; Kishihara, Masahito; Inomata, Shigeo

PATENT ASSIGNEE(S): Kansai Paint Co., Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 4 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

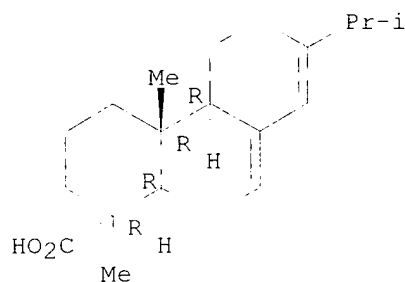
FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 09227803	A2	19970902	JP 1996-33609	19960221
PRIORITY APPLN. INFO.:			JP 1996-33609	19960221
AB	Title compns. contain Cu <sub>2</sub> O, bis(2-pyridinethiol-1-oxide) Zn (I), and solvent-soluble organic acid salts with metals less ionizable than Zn and at a mol equiv higher than that of Zn. A composition containing Cu <sub>2</sub> O 40, I 3, Pliolite S 5B 8, and Cu naphthenate 20 parts showed viscosity (KU value) 65 initially and 68 after 1 mo and good <b>antifouling</b> ability over 12 mo.			
IC	ICM C09D005-16			
CC	42-10 (Coatings, Inks, and Related Products) Section cross-reference(s): 5			
ST	cuprous oxide copper carboxylate <b>antifouling</b> coating; mercaptopyridine oxide zinc <b>antifouling</b> coating; storage stability <b>antifouling</b> coating copper carboxylate			
IT	Coating materials ( <b>antifouling</b> ; bis(mercaptopyridine oxide) zinc/cuprous oxide-containing <b>antifouling</b> coatings with storage stability)			
IT	Naphthenic acids, uses RL: MOA (Modifier or additive use); USES (Uses) (copper salts, coating solvent-soluble; bis(mercaptopyridine oxide) zinc/cuprous oxide-containing <b>antifouling</b> coatings with storage stability)			
IT	Naphthenic acids, uses RL: MOA (Modifier or additive use); USES (Uses) (iron salts, coating solvent-soluble; bis(mercaptopyridine oxide) zinc/cuprous oxide-containing <b>antifouling</b> coatings with storage stability)			
IT	Carboxylic acids, uses RL: MOA (Modifier or additive use); USES (Uses) (salts, coating solvent-soluble; bis(mercaptopyridine oxide) zinc/cuprous oxide-containing <b>antifouling</b> coatings with storage stability)			
IT	9003-55-8, Pliolite S 5B RL: TEM (Technical or engineered material use); USES (Uses) (binder; bis(mercaptopyridine oxide) zinc/cuprous oxide-containing <b>antifouling</b> coatings with storage stability)			
IT	1317-39-1, Cuprous oxide, uses 13463-41-7 RL: TEM (Technical or engineered material use); USES (Uses) (bis(mercaptopyridine oxide) zinc/cuprous oxide-containing <b>antifouling</b> coatings with storage stability)			
IT	7439-89-6D, Iron, naphthenic acid salts, uses 7440-50-8D, Copper, naphthenic acid salts, uses RL: MOA (Modifier or additive use); USES (Uses) (coating solvent-soluble; bis(mercaptopyridine oxide) zinc/cuprous oxide-containing <b>antifouling</b> coatings with good storage stability)			
IT	2980-59-8, Ferrous stearate 10248-55-2, Copper abietate RL: MOA (Modifier or additive use); USES (Uses) (coating solvent-soluble; bis(mercaptopyridine oxide) zinc/cuprous oxide-containing <b>antifouling</b> coatings with storage stability)			
IT	10248-55-2, Copper abietate RL: MOA (Modifier or additive use); USES (Uses) (coating solvent-soluble; bis(mercaptopyridine oxide) zinc/cuprous oxide-containing <b>antifouling</b> coatings with storage stability)			
RN	10248-55-2 HCA			
CN	1-Phenanthrenecarboxylic acid, 1,2,3,4,4a,4b,5,6,10,10a-decahydro-1,4a-			

dimethyl-7-(1-methylethyl)-, copper salt, (1R,4aR,4bR,10aR)- (9CI) (CA  
INDEX NAME)

Absolute stereochemistry.



●x Cu(x)

L17 ANSWER 7 OF 17 HCA COPYRIGHT 2004 ACS on STN  
ACCESSION NUMBER: 127:150025 HCA  
TITLE: Propylene polymer compositions and their extruded  
articles with good transparency, hue and aging  
resistance  
INVENTOR(S): Fujimura, Kazumasa; Inagaki, Hitoshi  
PATENT ASSIGNEE(S): Japan Polychem Corporation, Japan  
SOURCE: Eur. Pat. Appl., 10 pp.  
CODEN: EPXXDW  
DOCUMENT TYPE: Patent  
LANGUAGE: English  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 785231	A1	19970723	EP 1997-100950	19970122
EP 785231	B1	19991215		
R: DE, IT				
JP 09262891	A2	19971007	JP 1996-85022	19960408
JP 09262892	A2	19971007	JP 1996-86440	19960409
US 5714531	A	19980203	US 1997-784547	19970121
CN 1161982	A	19971015	CN 1997-101875	19970122
CN 1059455	B	20001213		

PRIORITY APPLN. INFO.:  
JP 1996-8275 A 19960122  
JP 1996-10058 A 19960124  
JP 1996-85022 A 19960408  
JP 1996-86440 A 19960409

AB Title composition for extruded articles, comprises a propylene polymer 100, a metal salt of a rosin compound 0.03-2, a tertiary amine light stabilizer 0.01-1, an aromatic phosphite and/or phosphorous ester antioxidant 0.01-0.5, and optionally, an antistatic agent 0.01-0.5 parts. The extruded articles from title composition do not contaminate extrusion equipment, and have good transparency, hue, thermal aging resistance and antistatic property if an antistatic agent is used. Thus, 97/3 propylene-ethylene random copolymer (MFR 2.5 g/10 min) 100, sodium and potassium salt (Na/K = 0.85/2.2 weight) of



rosin compound (0.84/0.16 mol ratio dehydroabiatic acid/tetrahydroabiatic acid) 0.3, polycondensate of di-Me succinate and 1-(2-hydroxyethyl)-4-hydroxy-2,2,6,6,-tetramethylpiperidine 0.1 and tris(2,4-di-tert-butylphenyl)phosphite 0.2 parts were mixed for 3 min, melt-kneaded, extruded and cooled to give a 0.7 mm-thick sheet without contamination on the roll, showing haze 7.9%, hue 0.8 (b value) and aging time (120°) >500 h.

IC ICM C08L023-10

ICI C08L023-10, C08K005-52, C08K005-3435, C08K005-098

CC 38-3 (Plastics Fabrication and Uses)

Section cross-reference(s): 37

IT Antistatic agents

RL: MOA (Modifier or additive use); USES (Uses)

(**nonfouling** propylene polymer compns. and their extruded articles with good transparency, hue and aging resistance)

IT Extruded plastics

RL: PEP (Physical, engineering or chemical process); PROC (Process)

(**nonfouling** propylene polymer compns. and their extruded articles with good transparency, hue and aging resistance)

IT Polyolefins

RL: PEP (Physical, engineering or chemical process); POF (Polymer in formulation); PROC (Process); USES (Uses)

(**nonfouling** propylene polymer compns. and their extruded articles with good transparency, hue and aging resistance)

IT Antioxidants

(phosphorus-type; **nonfouling** propylene polymer compns. and their extruded articles with good transparency, hue and aging resistance)

IT Crystal nucleating agents

(rosin acid metal salts; **nonfouling** propylene polymer compns. and their extruded articles with good transparency, hue and aging resistance)

IT Resin acids

RL: MOA (Modifier or additive use); USES (Uses)

(salts, nucleating agents; **nonfouling** propylene polymer compns. and their extruded articles with good transparency, hue and aging resistance)

IT Light stabilizers

(tertiary amines; **nonfouling** propylene polymer compns. and their extruded articles with good transparency, hue and aging resistance)

IT Amines, uses

RL: MOA (Modifier or additive use); USES (Uses)

(tertiary, light stabilizer; **nonfouling** propylene polymer compns. and their extruded articles with good transparency, hue and aging resistance)

IT 31570-04-4, Tris(2,4-di-tert-butylphenyl)phosphite

RL: MOA (Modifier or additive use); USES (Uses)

(antioxidant; **nonfouling** propylene polymer compns. and their extruded articles with good transparency, hue and aging resistance)

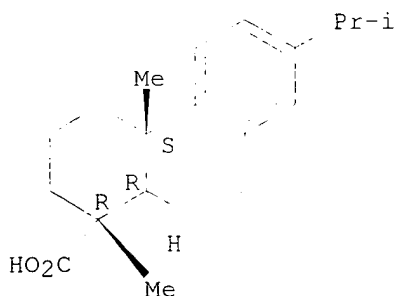
IT 1541-67-9, Lauryldiethanolamine 10213-78-2, n,n-Bis(2-hydroxyethyl)stearylamine 21134-45-2 31566-31-1, Glycerol monostearate 38613-77-3, Tetrakis(2,4-di-tert-butylphenyl)-4,4'-biphenylene diphosphonite

RL: MOA (Modifier or additive use); USES (Uses)

(antistatic agent; **nonfouling** propylene polymer compns. and their extruded articles with good transparency, hue and aging resistance)

- IT 65447-77-0, Dimethyl succinate-1-(2-hydroxyethyl)-4-hydroxy-2,2,6,6-tetramethylpiperidine copolymer 91788-83-9, Tetrakis(1,2,2,6,6-pentamethyl-4-piperidyl) 1,2,3,4-butanetetracarboxylate 163109-26-0 193473-26-6  
 RL: MOA (Modifier or additive use); USES (Uses)  
 (light stabilizer; **nonfouling** propylene polymer compns. and their extruded articles with good transparency, hue and aging resistance)
- IT 9010-79-1, Ethylene-propylene copolymer  
 RL: PEP (Physical, engineering or chemical process); POF (Polymer in formulation); TEM (Technical or engineered material use); PROC (Process); USES (Uses)  
 (**nonfouling** propylene polymer compns. and their extruded articles with good transparency, hue and aging resistance)
- IT 1740-19-8D, Dehydroabietic acid, sodium and potassium salts  
 27216-04-2D, Dihydroabietic acid, sodium, potassium or magnesium salts 28241-05-6D, Tetrahydroabietic acid, sodium and potassium salts 31424-09-6D, Dihydropimaric acid, sodium, potassium or magnesium salts  
 RL: MOA (Modifier or additive use); USES (Uses)  
 (nucleating agent; **nonfouling** propylene polymer compns. and their extruded articles with good transparency, hue and aging resistance)
- IT 1740-19-8D, Dehydroabietic acid, sodium and potassium salts  
 27216-04-2D, Dihydroabietic acid, sodium, potassium or magnesium salts 28241-05-6D, Tetrahydroabietic acid, sodium and potassium salts  
 RL: MOA (Modifier or additive use); USES (Uses)  
 (nucleating agent; **nonfouling** propylene polymer compns. and their extruded articles with good transparency, hue and aging resistance)
- RN 1740-19-8 HCA  
 CN 1-Phenanthrenecarboxylic acid, 1,2,3,4,4a,9,10,10a-octahydro-1,4a-dimethyl-7-(1-methylethyl)-, (1R,4aS,10aR)- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).

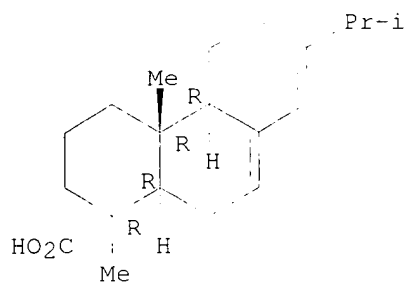


- RN 27216-04-2 HCA  
 CN 1-Phenanthrenecarboxylic acid, dodecahydro-1,4a-dimethyl-7-(1-methylethyl)-, (1R,4aR,4bR,10aR)- (9CI) (CA INDEX NAME)

CM 1

CRN 514-10-3  
 CMF C20 H30 O2

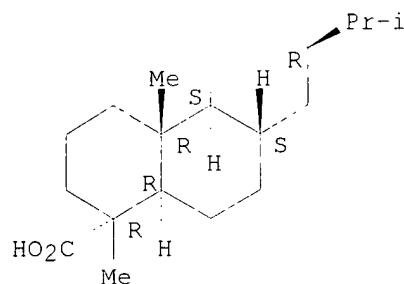
Absolute stereochemistry.



RN 28241-05-6 HCA

CN 1-Phenanthrenecarboxylic acid, tetradecahydro-1,4a-dimethyl-7-(1-methylethyl)-, (1R,4aR,4bS,7R,8aS,10aR)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L17 ANSWER 8 OF 17 HCA COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 125:59761 HCA

TITLE: ToF-SIMS analysis of adsorbate/membrane interactions.  
I. Adsorption of dehydroabiatic acid on  
poly(vinylidene fluoride)

AUTHOR(S): Spevack, P.; Deslandes, Y.

CORPORATE SOURCE: Surfaces and Nanoparticles Group, Institute for  
Chemical Process and Environmental Technology,  
National Research Council Canada, Ottawa, ON, K1A 0R6,  
Can.

SOURCE: Applied Surface Science (1996), 99(1), 41-50  
CODEN: ASUSEE; ISSN: 0169-4332

PUBLISHER: Elsevier

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Time-of-Flight Secondary Ion Mass Spectrometry (ToF-SIMS) was used to investigate the adsorption behavior of aqueous solns. of dehydroabiatic acid in contact with poly(vinylidene fluoride). An identification scheme was developed to qual. identify the presence of adsorbed resin acid on the membrane surface at solution concns. from 10-1000 ppm. ToF-SIMS reveals that dehydroabiatic acid adsorbs inhomogeneously on the surface of poly(vinylidene fluoride).

CC 37-5 (Plastics Manufacture and Processing)

IT Adsorption

**Fouling**

(adsorption of dehydroabietic acid on poly(vinylidene fluoride) membranes determined by time-of-flight SIMS)

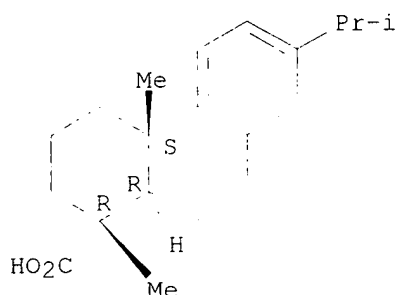
IT 1740-19-8, Dehydroabietic acid  
RL: PEP (Physical, engineering or chemical process); PROC (Process)  
(adsorption of dehydroabietic acid on poly(vinylidene fluoride) membranes determined by time-of-flight SIMS)

IT 1740-19-8, Dehydroabietic acid  
RL: PEP (Physical, engineering or chemical process); PROC (Process)  
(adsorption of dehydroabietic acid on poly(vinylidene fluoride) membranes determined by time-of-flight SIMS)

RN 1740-19-8 HCA

CN 1-Phenanthrenecarboxylic acid, 1,2,3,4,4a,9,10,10a-octahydro-1,4a-dimethyl-7-(1-methylethyl)-, (1R,4aS,10aR)- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).



L17 ANSWER 9 OF 17 HCA COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 123:202205 HCA

TITLE: High build vinyl **antifouling** paints based on disproportionated WW rosin

AUTHOR(S): Benitez, Juan C.; Giudice, Carlos A.

CORPORATE SOURCE: Centro Investigacion Desarrollo, CIDEPINT, La Plata, Argent.

SOURCE: Rivista di Merceologia (1994), 33(1), 3-15  
CODEN: RIMEDE; ISSN: 0392-064X

PUBLISHER: Cooperativa Libreria Universitaria Editrice

DOCUMENT TYPE: Journal

LANGUAGE: Spanish

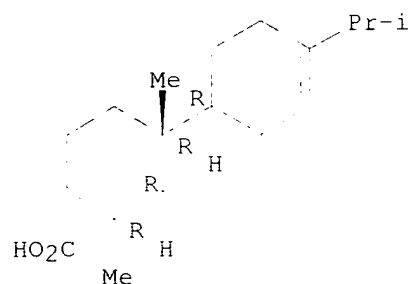
AB A disproportionated rosin was used in manufacture of **antifouling** marine paints with vinyl chloride-vinyl acetate resins in various proportions and red Cu2O and ZnO as toxic agents. The disproportionated rosin was prepared by treatment of molten rosin with a mixture of I2 and naphthenes at 260° for one hour, cooling to 70°, and treatment with furfural and naphthenes. The furfural and naphthenes were removed by distillation and evaporation, resp., to obtain disproportionated rosin,  
with acid number 139, m.p. 50°, softening point of 68°, composed mainly of dihydroxy-abietic acid and tetrahydroxy-abietic acid, the oxidation products of abietic acid, the main component in the starting rosin. Painted panels were exposed to air for 24 h and for 30 days, then, they were submerged in seawater. A formulation containing disproportionated rosin : vinyl resin in 2:1 ratio showed a high biocide activity, with a 90% permanency index after 36 mo under water.

CC 42-10 (Coatings, Inks, and Related Products)

ST rosin disproportionated **antifouling** marine paint; cuprous oxide

- IT rosin vinyl **antifouling** paint  
Resin acids and Rosin acids  
RL: TEM (Technical or engineered material use); USES (Uses)  
(formulation and testing of high-build disproportionated WW rosin-vinyl cuprous oxide **antifouling** paints)
- IT Coating materials  
(**antifouling**, paints, formulation and testing of high-build disproportionated WW rosin-vinyl cuprous oxide **antifouling** paints)
- IT **Fouling** control agents  
(coatings, paints, formulation and testing of high-build disproportionated WW rosin-vinyl cuprous oxide **antifouling** paints)
- IT 1314-13-2, Zinc oxide (ZnO), uses 1317-39-1, Copper oxide (Cu<sub>2</sub>O), uses  
RL: BUU (Biological use, unclassified); TEM (Technical or engineered material use); BIOL (Biological study); USES (Uses)  
(formulation and testing of high-build disproportionated WW rosin-vinyl cuprous oxide **antifouling** paints)
- IT **514-10-3**, Abietic acid  
RL: PEP (Physical, engineering or chemical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)  
(formulation and testing of high-build disproportionated WW rosin-vinyl cuprous oxide **antifouling** paints)
- IT **20489-85-4P 154784-37-9P**  
RL: PNU (Preparation, unclassified); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
(formulation and testing of high-build disproportionated WW rosin-vinyl cuprous oxide **antifouling** paints)
- IT 9003-22-9, Vinyl acetate-vinyl chloride copolymer  
RL: TEM (Technical or engineered material use); USES (Uses)  
(formulation and testing of high-build disproportionated WW rosin-vinyl cuprous oxide **antifouling** paints)
- IT **514-10-3**, Abietic acid  
RL: PEP (Physical, engineering or chemical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)  
(formulation and testing of high-build disproportionated WW rosin-vinyl cuprous oxide **antifouling** paints)
- RN 514-10-3 HCA  
CN 1-Phenanthrenecarboxylic acid, 1,2,3,4,4a,4b,5,6,10,10a-decahydro-1,4a-dimethyl-7-(1-methylethyl)-, (1R,4aR,4bR,10aR)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

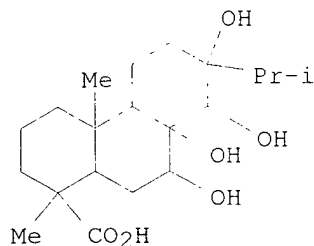


- IT **20489-85-4P 154784-37-9P**  
RL: PNU (Preparation, unclassified); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(formulation and testing of high-build disproportionated WW rosin-vinyl cuprous oxide **antifouling** paints)

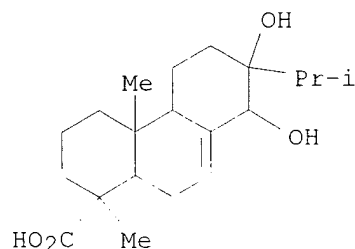
RN 20489-85-4 HCA

CN 1-Phenanthrenecarboxylic acid, tetradecahydro-7,8,8a,9-tetrahydroxy-1,4a-dimethyl-7-(1-methylethyl)- (9CI) (CA INDEX NAME)



RN 154784-37-9 HCA

CN 1-Phenanthrenecarboxylic acid, 1,2,3,4,4a,4b,5,6,7,8,10,10a-dodecahydro-7,8-dihydroxy-1,4a-dimethyl-7-(1-methylethyl)- (9CI) (CA INDEX NAME)



L17 ANSWER 10 OF 17 HCA COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 120:10406 HCA

TITLE: Acrylic esters in formulations of **antifouling** paints

AUTHOR(S): Arias, E.; Suau, P.; Liesa, F.; Herdocio, N.

CORPORATE SOURCE: Inst. Cienc. Mar., Barcelona 08039, Spain

SOURCE: Pinturas y Acabados Industriales (1993), 35(205), 64-71

CODEN: PACIDY; ISSN: 0031-9953

DOCUMENT TYPE: Journal

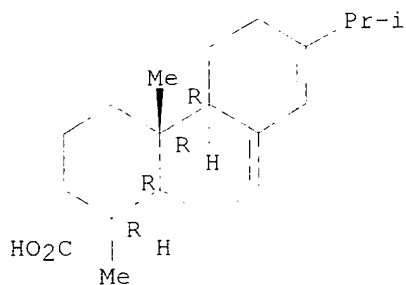
LANGUAGE: Spanish

AB **Antifouling** formulations containing vinyl chloride, abietic acid, Me methacrylate and Bu methacrylate binders, with Cu<sub>2</sub>O, CuSCN, ZnO, tributyltin oxide (TBTO), Irgarol, and Preventol dyes were evaluated. Immersion tests were carried out at Villanueva y Geltru and Palma de Mallorca bays, Spain. The hydrol. and biol. conditions of port waters were determined in terms of dissolved O, nutrients, and plankton content. The **antifouling** activity of all the pigments/toxic agents was comparable in all the formulations tested; no difference was observed for formulations containing only TBTO. The leaching rate of Cu was slightly higher for formulations containing abietic acid and vinyl chloride, and in all the cases was >10 µg/cm<sup>2</sup>-day. The overall efficiency of the paints was very good for samples in the Villanueva Bay and somewhat inferior in the Palma de Mallorca waters.

CC 42-7 (Coatings, Inks, and Related Products)

Section cross-reference(s): 61  
ST methacrylate copper oxide **antifouling** paint; tributyltin oxide  
acrylic **antifouling** paint  
IT Coating materials  
(**antifouling**, marine, paints, acrylic ester-based, efficiency  
of, in seawater of Spanish bays)  
IT Waters, natural  
(bay, hydrol. and biol. composition of, **antifouling** paint  
efficiency relation with, of Spanish bays)  
IT 75-01-4, Vinyl chloride, uses **514-10-3**, Abietic acid  
25608-33-7, Methyl methacrylate-butyl methacrylate copolymer  
RL: USES (Uses)  
(binder, **antifouling** paint containing, efficiency of, in seawater  
of Spanish bays)  
IT 56-35-9, Tributyltin oxide 1111-67-7 1314-13-2, Zinc oxide (ZnO), uses  
1317-39-1, Cuprous oxide, uses  
RL: USES (Uses)  
(pigment, **antifouling** paint containing, efficiency of, in  
seawater of Spanish bays)  
IT **514-10-3**, Abietic acid  
RL: USES (Uses)  
(binder, **antifouling** paint containing, efficiency of, in seawater  
of Spanish bays)  
RN 514-10-3 HCA  
CN 1-Phenanthrenecarboxylic acid, 1,2,3,4,4a,4b,5,6,10,10a-decahydro-1,4a-  
dimethyl-7-(1-methylethyl)-, (1R,4aR,4bR,10aR)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L17 ANSWER 11 OF 17 HCA COPYRIGHT 2004 ACS on STN  
ACCESSION NUMBER: 119:273464 HCA  
TITLE: Soluble-matrix **antifouling** paints based on  
disproportionated WW rosin resin  
AUTHOR(S): Giudice, C. A.; Benitez, J. C.  
CORPORATE SOURCE: CONICET, Argent.  
SOURCE: Anales - CIDEPINT (1993) 33-47  
CODEN: ANCIDS; ISSN: 0325-4186  
DOCUMENT TYPE: Journal  
LANGUAGE: Spanish

AB **Antifouling** paint formulations containing variable amts. of  
disproportionated WW rosin, Cu2O as main toxic agent, ZnO as secondary  
toxic agent, and acrylic-styrene polymer binder were tested and compared  
with formulations containing original resins. The main components of the  
original resin are abietic acid and its isomers, levopimaric acid, and  
isodextropimaric acid; the modified rosin contains dehydroabietic acid,

dihydroabietic acid, and tetrahydroabietic acid. All the formulations containing the disproportionated rosin met the criterion of <1 attachment after 30 mo immersion of specimens. The dissoln. rate of the paints decreased with time after 30 mo of immersion testing, indicative of release of soluble rosin components. The decrease in dissoln. rate resulted in diminished **antifouling** activity.

CC 42-10 (Coatings, Inks, and Related Products)

ST rosin disproportionated **antifouling** paint; cuprous oxide resin **antifouling** paint

IT Resin acids and Rosin acids

RL: USES (Uses)

(**antifouling** paint containing disproportionated, with cuprous oxide and zinc oxide, dissoln. rate and activity of)

IT Coating materials

(**antifouling**, marine, paints, disproportionated rosin and cuprous oxide and zinc oxide, dissoln. rate and activity of)

IT **Fouling** control agents

(coatings, marine paints, disproportionated rosin and cuprous oxide and zinc oxide, dissoln. rate and activity of)

IT Acrylic polymers, uses

RL: USES (Uses)

(styrene-containing, **antifouling** paint containing disproportionated rosin and, dissoln. rate and activity of)

IT 1314-13-2, Zinc oxide (ZnO), uses 1317-39-1, Cuprous oxide, uses

RL: USES (Uses)

(**antifouling** paint containing disproportionated rosin and, dissoln. rate and activity of)

IT 1740-19-8, Dehydroabietic acid 17611-19-7,

Dihydroabietic acid 28241-05-6, Tetrahydroabietic acid

RL: USES (Uses)

(modified rosin containing, for use in **antifouling** paint)

IT 79-54-9, Levopimaric acid 471-74-9, Isodextropimaric acid

514-10-3, Abietic acid

RL: USES (Uses)

(rosin containing, for modification and use in **antifouling** paint)

IT 1740-19-8, Dehydroabietic acid 17611-19-7,

Dihydroabietic acid 28241-05-6, Tetrahydroabietic acid

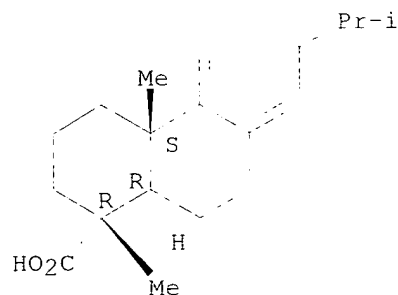
RL: USES (Uses)

(modified rosin containing, for use in **antifouling** paint)

RN 1740-19-8 HCA

CN 1-Phenanthrenecarboxylic acid, 1,2,3,4,4a,9,10,10a-octahydro-1,4a-dimethyl-7-(1-methylethyl)-, (1R,4aS,10aR)- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).

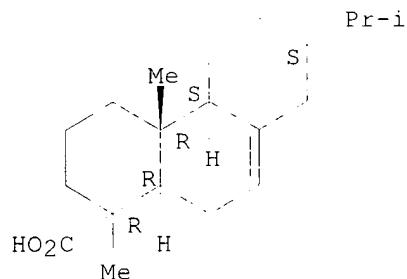


RN 17611-19-7 HCA



CN 1-Phenanthrenecarboxylic acid, 1,2,3,4,4a,4b,5,6,7,8,10,10a-dodecahydro-1,4a-dimethyl-7-(1-methylethyl)-, (1R,4aR,4bS,7S,10aR)- (9CI) (CA INDEX NAME)

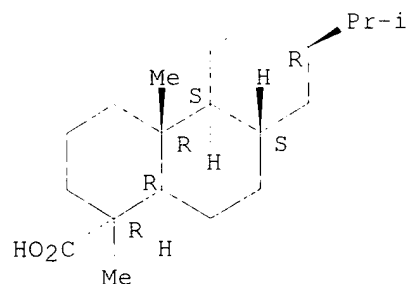
Absolute stereochemistry.



RN 28241-05-6 HCA

CN 1-Phenanthrenecarboxylic acid, tetradeca-hydro-1,4a-dimethyl-7-(1-methylethyl)-, (1R,4aR,4bS,7R,8aS,10aR)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



IT 79-54-9, Levopimaric acid 514-10-3, Abietic acid

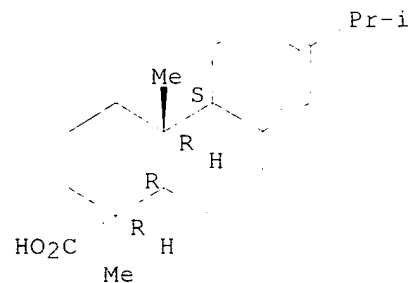
RL: USES (Uses)

(rosin containing, for modification and use in **antifouling** paint)

RN 79-54-9 HCA

CN 1-Phenanthrenecarboxylic acid, 1,2,3,4,4a,4b,5,9,10,10a-decahydro-1,4a-dimethyl-7-(1-methylethyl)-, (1R,4aR,4bS,10aR)- (9CI) (CA INDEX NAME)

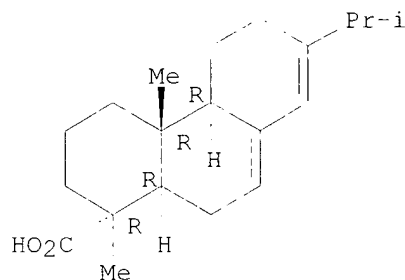
Absolute stereochemistry.



RN 514-10-3 HCA

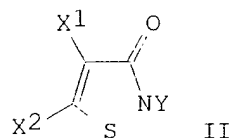
CN 1-Phenanthrenecarboxylic acid, 1,2,3,4,4a,4b,5,6,10,10a-decahydro-1,4a-dimethyl-7-(1-methylethyl)-, (1R,4aR,4bR,10aR)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L17 ANSWER 12 OF 17 HCA COPYRIGHT 2004 ACS on STN  
 ACCESSION NUMBER: 118:212511 HCA  
 TITLE: Preparation of sparingly water-soluble salts of dodecylguanidine as **antifouling** agents against marine organisms  
 INVENTOR(S): Akashi, Hiroyuki; Inoue, Takeshi; Kohara, Masanori; Hidaka, Yasuhiro; Shibuya, Keiji  
 PATENT ASSIGNEE(S): Yoshitomi Pharmaceutical Industries, Ltd., Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 29 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 04225945	A2	19920814	JP 1991-140999	19910515
PRIORITY APPLN. INFO.:			JP 1990-126460	19900515
			JP 1990-126461	19900515
			JP 1990-145034	19900601
			JP 1990-274450	19901012
OTHER SOURCE(S):		MARPAT 118:212511		
GI				



AB Sparingly water-soluble salts of dodecylguanidine (I) with an acid selected from rosin acid, oleic acid, naphthenic acids, or salicylic acid, with long lasting effect and low toxicity, are prepared An **antifouling** agent contains the above I salt and addnl. contains (1) 2-(thiocyanomethylthio)benzothiazole, (2)  $\geq 1$  tetrathiuram disulfides R<sub>2</sub>NC(S)SSC(S)NR<sub>2</sub> (R = C1-4 alkyl), (3)  $\geq 1$  isothiazolone

derivs. [II; X1, X2 = H, halo, C1-4 alkyl; Y = C1-18 alkyl, (un)substituted C<18 alkyl, C2-18 (halo)alkenyl, (halo)alkynyl, (un)substituted cycloalkyl, aralkyl, or aryl] and /or  $\geq 1$  sulfides R1SnR1 (R1 = C1-20 alkyl; n = 2-10). Thus, 50 g rosin WW (acid value 170) was completely dissolved in 200 g xylene, thereto a mixture of 200 g 10% solution of I.HCl and 100g 3<sup>a</sup> aqueous NaOH was added, and the mixture was allowed to react at 55-60°. The xylene layer was separated, washed with H2O, and concentrated to give 50% solution of reddish brown I rosin salt in xylene.

A knotless polyethylene fish net was dipped in an **antifouling** agent containing the xylene solution of I rosin salt 20, a 50% solution of an acrylic resin in xylene 50, and xylene 30%, dried, and immersed in the sea. After 3 mo there was no adhesion of contaminating organisms to the net. Many other **antifouling** agents for fish nets as well as **antifouling** coatings for ship hulls were given.

IC ICM C07C279-22  
ICS A01N031-02; A01N043-78; A01N047-26; A01N047-44; A01N055-02;  
C07C333-32; C07D275-02  
CC 23-20 (Aliphatic Compounds)  
Section cross-reference(s): 5, 42, 45  
ST dodecylguanidine salt prepn **antifouling** agent; marine organism  
**antifouling** agent; ship bottom **antifouling** coating  
IT Fish nets  
(**antifouling** agents for, containing sparingly water-soluble dodecylguanidine salts)  
IT Ships  
(hulls, **antifouling** coatings for, containing sparingly water-soluble dodecylguanidine salts)  
IT **Fouling** control agents  
(sparingly water-soluble salts of dodecylguanidine, for marine organisms)  
IT Coating materials  
(**antifouling**, marine, sparingly water-soluble salts of dodecylguanidine for)  
IT **Fouling** control agents  
(coatings, marine, sparingly water-soluble salts of dodecylguanidine for)  
IT Naphthenic acids, compounds  
RL: SPN (Synthetic preparation); PREP (Preparation)  
(compds., with dodecylguanidine, preparation of, as **antifouling** agents for marine organisms)  
IT Resin acids and Rosin acids  
RL: SPN (Synthetic preparation); PREP (Preparation)  
(salts, with dodecylguanidine, preparation of, as **antifouling** agents for marine organisms)  
IT 97-77-8, Tetraethylthiuram disulfide 137-26-8, Tetramethylthiuram disulfide 21564-17-0, 2-(Thiocyanomethylthio)benzothiazole 26858-22-0 38622-35-4, Di-tert-nonyl pentasulfide 64359-81-5 66159-91-9 66160-00-7 66160-16-5 66160-36-9 66178-80-1 113011-45-3  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(marine **antifouling** agent containing, for fishing nets or ship bottom)  
IT 112-65-2DP, Dodecylguanidine, salt with naphthenic acid 112-65-2DP, Dodecylguanidine, salt with rosin  
RL: PREP (Preparation)  
(preparation of, as marine **antifouling** agent)  
IT **146715-47-1P** 146715-48-2P 146715-49-3P 146715-50-6P  
RL: SPN (Synthetic preparation); PREP (Preparation)  
(preparation of, as marine **antifouling** agent)

IT 13590-97-1, Dodecylguanidine hydrochloride  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(salt exchange of, in preparation of marine **antifouling** agents)

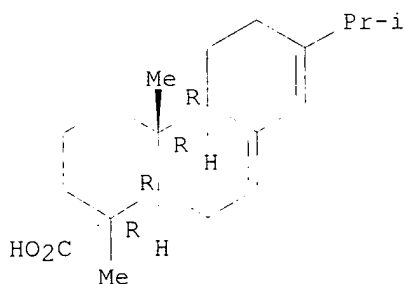
IT **146715-47-1P**  
RL: SPN (Synthetic preparation); PREP (Preparation)  
(preparation of, as marine **antifouling** agent)

RN 146715-47-1 HCA  
CN 1-Phenanthrenecarboxylic acid, 1,2,3,4,4a,4b,5,6,10,10a-decahydro-1,4a-dimethyl-7-(1-methylethyl)-, [1R-(1 $\alpha$ ,4a $\beta$ ,4b $\alpha$ ,10a $\alpha$ )]-, compd. with dodecylguanidine (1:1) (9CI) (CA INDEX NAME)

CM 1

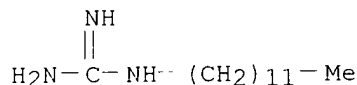
CRN 514-10-3  
CMF C20 H30 O2

Absolute stereochemistry.



CM 2

CRN 112-65-2  
CMF C13 H29 N3



L17 ANSWER 13 OF 17 HCA COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 117:145309 HCA

TITLE: Chlorhexidine rosin salts as **antifouling** agents

INVENTOR(S): Akashi, Hiroyuki; Inoue, Takeshi; Kohara, Masanori; Hidaka, Yasuhiro; Shibuya, Keiji

PATENT ASSIGNEE(S): Yoshitomi Seiyaku K. K., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 5 pp.  
CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

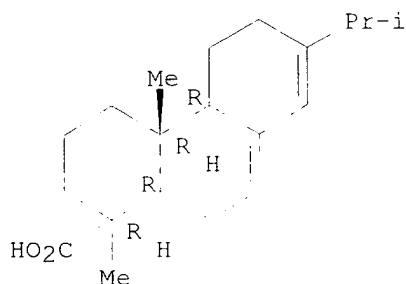
FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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JP 04103506            A2    19920406            JP 1990-220872    19900821  
PRIORITY APPLN. INFO.:            JP 1990-220872    19900821  
AB    **Antifouling** agents contain chlorhexidine (I) rosin salts. Rosin  
WW (rosin) and I were stirred with xylene at 55-60° for 4 h to give  
I rosin salt (I:rosin = 1:4). An xylene solution of 50% I rosin salt 20, an  
xylene solution of 50% acrylic polymer 50, and xylene 30% were mixed to give  
an **antifouling** agent. Fish nets were coated with the agent and  
kept in seawater to show total **antifouling** effect even 2 mo  
later.  
IC    ICM A01N065-00  
ICS C02F001-00  
CC    5-2 (Agrochemical Bioregulators)  
ST    **antifouling** chlorhexidine rosin salt; **fouling** control  
chlorhexidine rosin salt  
IT    Fish nets  
      (**antifouling** chlorhexidine rosin salt-coated)  
IT    **Fouling** control agents  
      (chlorhexidine rosin salts)  
IT    55-56-1D, Chlorhexidine, rosin salts **514-10-3D**, Abietic acid,  
rosin salts  
RL: BIOL (Biological study)  
      (**fouling** control agents)  
IT    **143405-45-2P**  
RL: SPN (Synthetic preparation); PREP (Preparation)  
      (preparation and **antifouling** activity of)  
IT    **514-10-3D**, Abietic acid, rosin salts  
RL: BIOL (Biological study)  
      (**fouling** control agents)  
RN    514-10-3 HCA  
CN    1-Phenanthrenecarboxylic acid, 1,2,3,4,4a,4b,5,6,10,10a-decahydro-1,4a-  
dimethyl-7-(1-methylethyl)-, (1R,4aR,4bR,10aR)- (9CI) (CA INDEX NAME)

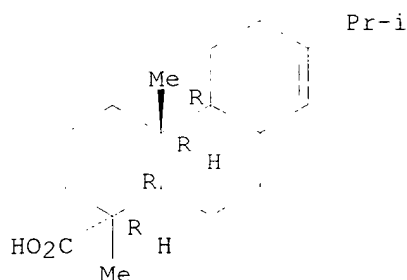
Absolute stereochemistry.



IT    **143405-45-2P**  
RL: SPN (Synthetic preparation); PREP (Preparation)  
      (preparation and **antifouling** activity of)  
RN    143405-45-2 HCA  
CN    1-Phenanthrenecarboxylic acid, 1,2,3,4,4a,4b,5,6,10,10a-decahydro-1,4a-  
dimethyl-7-(1-methylethyl)-, [1R-(1 $\alpha$ ,4a $\beta$ ,4b $\alpha$ ,10a $\alpha$ )]-  
, compd. with N,N''-bis(4-chlorophenyl)-3,12-diimino-2,4,11,13-  
tetraazatetradecanediimidamide (9CI) (CA INDEX NAME)  
  
CM    1  
  
CRN    514-10-3

CMF C20 H30 O2

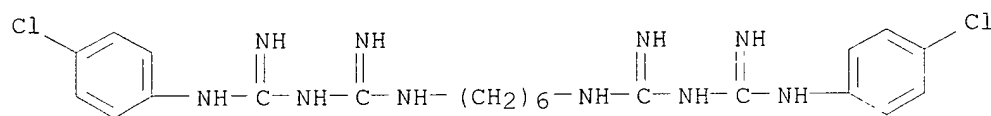
Absolute stereochemistry.



CM 2

CRN 55-56-1

CMF C22 H30 Cl2 N10



L17 ANSWER 14 OF 17 HCA COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 117:126464 HCA

TITLE: Synergistic **antifouling** agents containing chlorhexidine rosin salt and 2-(thiocyanomethylthio)benzothiazole

INVENTOR(S): Akashi, Hiroyuki; Inoe, Takeshi; Kohara, Masanori; Hidaka, Yasuhiro; Shibuya, Keiji

PATENT ASSIGNEE(S): Yoshitomi Seiyaku K. K., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 6 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

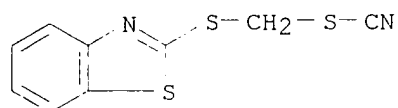
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 04103505	A2	19920406	JP 1990-220433	19900822

PRIORITY APPLN. INFO.: JP 1990-220433 19900822

AB Synergistic **antifouling** agents contain chlorhexidine (I) rosin salt and 2-(thiocyanomethylthio)benzothiazole (II) as active ingredients. Rosin and I were stirred with xylene at 55-60° for .apprx.4 h to give I rosin salt (I/rosin 1:4). A xylene solution containing 50- I rosin salt 10 and II 5 weight- and a solution containing 50- acrylic polymer 50 and xylene 35 weight- were mixed to give an **antifouling** agent. Fish nets were coated with the agent and kept in seawater to show total **antifouling** effect for 3 mo, vs. less effect for controls treated with a xylene solution containing tributyltin methacrylate copolymer.

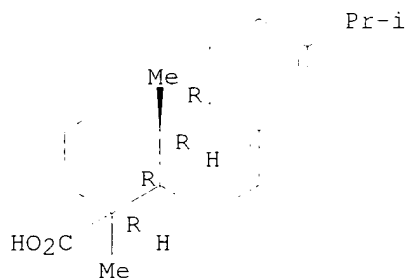
IC ICM A01N065-00  
ICS C02F001-00  
ICI A01N065-00, A01N043-78  
CC 5-3 (Agrochemical Bioregulators)  
ST chlorhexidine rosin thiocyanomethylthiobenzothiazole synergism  
**antifouling**; benzothiazole chlorhexidine rosin **antifouling**  
synergism  
IT Fish nets  
(**antifouling** agents for, synergistic mixts. of chlorhexidine  
rosin salts with (thiocyanomethylthio)benzothiazole as)  
IT Resin acids and Rosin acids  
RL: BIOL (Biological study)  
(salts, with (thiocyanomethylthio)benzothiazole, as **antifouling**  
agents, for fish nets)  
IT **Fouling** control agents  
(synergistic, chlorhexidine rosin salt mixts. with  
(thiocyanomethylthio)benzothiazole)  
IT **143405-46-3**  
RL: BIOL (Biological study)  
(**antifoulin** agent, synergistic)  
IT 21564-17-0D, 2-(Thiocyanomethylthio)benzothiazole, mixts. with  
chlorhexidine rosin salts  
RL: BIOL (Biological study)  
(**antifouling** agents containing, synergistic)  
IT 55-56-1DP, Chlorhexidine, rosin salt **143405-45-2P**  
RL: SPN (Synthetic preparation); PREP (Preparation)  
(preparation of, **antifouling** agents containing  
(thiocyanomethylthio)benzothiazole and, synergistic)  
IT **143405-46-3**  
RL: BIOL (Biological study)  
(**antifoulin** agent, synergistic)  
RN 143405-46-3 HCA  
CN 1-Phenanthrenecarboxylic acid, 1,2,3,4,4a,4b,5,6,10,10a-decahydro-1,4a-  
dimethyl-7-(1-methylethyl)-, [1R-(1 $\alpha$ ,4 $\alpha$  $\beta$ ,4 $\beta$  $\alpha$ ,10 $\alpha$ )]-  
, compd. with N,N''-bis(4-chlorophenyl)-3,12-diimino-2,4,11,13-  
tetraazatetradecanediimidamide, mixt. with (2-benzothiazolylthio)methyl  
thiocyanate (9CI) (CA INDEX NAME)  
  
CM 1  
  
CRN 21564-17-0  
CMF C9 H6 N2 S3



CM 2  
  
CRN 143405-45-2  
CMF C22 H30 Cl2 N10 . C20 H30 O2  
  
CM 3  
  
CRN 514-10-3

CMF C20 H30 O2

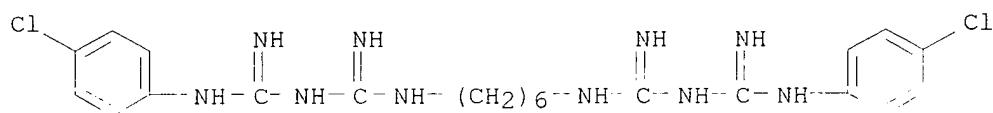
Absolute stereochemistry.



CM 4

CRN 55-56-1

CMF C22 H30 Cl2 N10



IT 143405-45-2P

RL: SPN (Synthetic preparation); PREP (Preparation)  
 (preparation of, **antifouling** agents containing  
 (thiocyanomethylthio)benzothiazole and, synergistic)

RN 143405-45-2 HCA

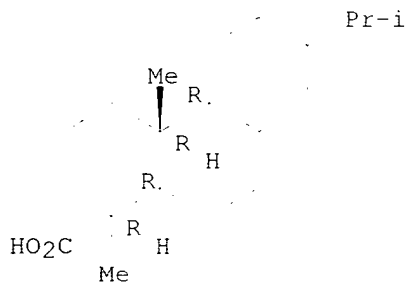
CN 1-Phenanthrenecarboxylic acid, 1,2,3,4,4a,4b,5,6,10,10a-decahydro-1,4a-  
 dimethyl-7-(1-methylethyl)-, [1R-(1 $\alpha$ ,4a $\beta$ ,4b $\alpha$ ,10a $\alpha$ )]-  
 , compd. with N,N''-bis(4-chlorophenyl)-3,12-diimino-2,4,11,13-  
 tetraazatetradecanediimidamide (9CI) (CA INDEX NAME)

CM 1

CRN 514-10-3

CMF C20 H30 O2

Absolute stereochemistry.

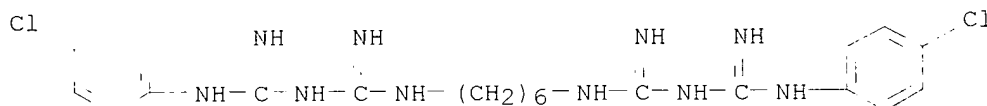




CM 2

CRN 55-56-1

CMF C22 H30 Cl2 N10



L17 ANSWER 15 OF 17 HCA COPYRIGHT 2004 ACS on STN  
 ACCESSION NUMBER: 73:26704 HCA  
 TITLE: **Antifouling** paints  
 INVENTOR(S): Hosoda, Minoru; Sasaki, Yoshiaki  
 PATENT ASSIGNEE(S): Dainippon Paint Manufg. Co., Ltd.  
 SOURCE: Jpn. Tokkyo Koho, 3 pp.  
 CODEN: JAXXAD  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 45004186	B4	19700212	JP	19641029

AB Ship **antifouling** compns. containing Bu<sub>3</sub>SnR (R = laurate, abietate, linoleate, naphthenate) are effective against **fouling** by serpula, sea moss, and lavers. Additives, pigments, and solvents used are rosin, linseed oil, ZnO, rouge, talc, coal tar, solvent naphtha, DDT, vinyl chloride-vinyl acetate copolymers, xylene and iso-BuCOMe.

NCL 24F2

CC 42 (Coatings, Inks, and Related Products)

ST **antifouling** paints ships; tributyltin **antifouling** agents; tin tributyl **antifouling** agents

IT Coating materials  
 (**antifouling**, vinyl acetate-vinyl chloride polymers, containing tributyltin carboxylates)

IT Naphthenic acids, compounds  
 RL: USES (Uses)  
 (tributyltin salts, vinyl acetate-vinyl chloride polymer coatings containing, **antifouling**)

IT 9003-22-9, uses and miscellaneous  
 RL: TEM (Technical or engineered material use); USES (Uses)  
 (coatings, containing tributyltin carboxylates, **antifouling**)

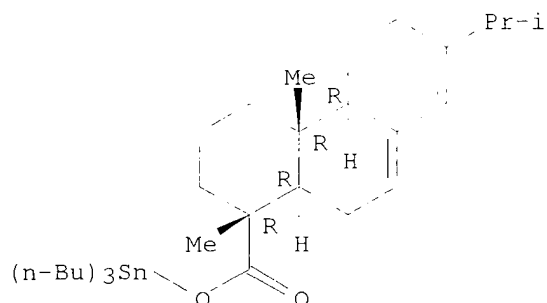
IT 3090-36-6 24124-25-2 **26239-64-5**  
 RL: USES (Uses)  
 (vinyl acetate-vinyl chloride polymer coatings containing, **antifouling**)

IT **26239-64-5**  
 RL: USES (Uses)  
 (vinyl acetate-vinyl chloride polymer coatings containing, **antifouling**)

RN 26239-64-5 HCA

CN Stannane, tributyl[[[1,2,3,4,4a,4b,5,6,10,10a-decahydro-1,4a-dimethyl-7-(1-methylethyl)-1-phenanthrenyl]carbonyl]oxy]-, [1R-(1 $\alpha$ ,4 $\alpha$ ,4 $\beta$ ,4 $\alpha$ ,10 $\alpha$ )]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L17 ANSWER 16 OF 17 HCA COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 44:54435 HCA

ORIGINAL REFERENCE NO.: 44:10343a-b

TITLE: **Antifouling** paints

AUTHOR(S): Alexander, Allen L.; Benemelis, R. L.; Crecelius, S. B.

CORPORATE SOURCE: Naval Research Lab., Washington, DC

SOURCE: Journal of Industrial and Engineering Chemistry  
(Washington, D. C.) (1950), 42, 1562-5

CODEN: JIECAD; ISSN: 0095-9014

DOCUMENT TYPE: Journal

LANGUAGE: Unavailable

AB cf. C.A. 43, 7715b. A search was made for substitutes for rosin in **antifouling** paints. Glycerol and pentaerythritol esters of tall oil were found to be unsatisfactory in this study. Tall oil showed promising results. Formulations in which half of the rosin was replaced by the oil produced acceptable films. Further dilution of the rosin by tall oil was detrimental. Abietic acid as well as its methyl ester proved to be superior to rosin. Cu<sub>2</sub>O **antifouling** pigments appeared slightly better than pigments containing 85% Cu and 15% Cu<sub>2</sub>O.

CC 26 (Paints, Varnishes, and Lacquers)

IT Paint

(**antifouling** or ship-bottom, rosin substitutes in Cu- and Cu<sub>2</sub>O-pigmented)

IT Tall oil

(as rosin substitute in **antifouling** paints)

IT Resin acids or Rosin acids

(esters of tall-oil, with glycerol and pentaerythritol, rosin replacement by, in **antifouling** paints)

IT Rosin

(for **antifouling** paints, abietic acid, abietic Me ester and tall oil as replacements for)

IT 56-81-5, Glycerol

(esters, with tall oil, rosin replacement by, in **antifouling** paints)

IT 127-25-3, Abietic acid, methyl ester 514-10-3, Abietic acid

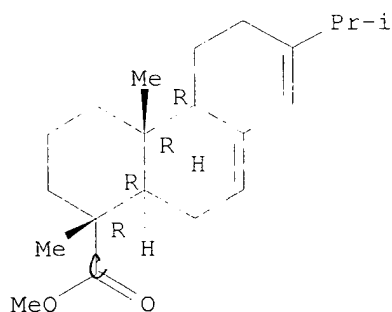
(rosin replacement by, in **antifouling** paints)

IT 115-77-5, Pentaerythritol

(tall-oil esters, rosin replacement by, in **antifouling** paints)

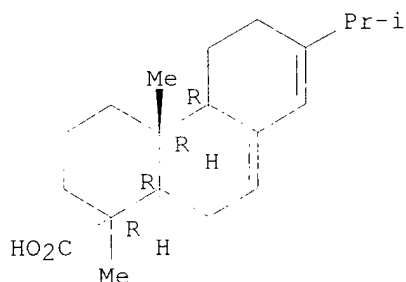
IT 127-25-3, Abietic acid, methyl ester 514-10-3, Abietic acid  
(rosin replacement by, in **antifouling** paints)  
RN 127-25-3 HCA  
CN 1-Phenanthrenecarboxylic acid, 1,2,3,4,4a,4b,5,6,10,10a-decahydro-1,4a-dimethyl-7-(1-methylethyl)-, methyl ester, (1R,4aR,4bR,10aR)- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (-).



RN 514-10-3 HCA  
CN 1-Phenanthrenecarboxylic acid, 1,2,3,4,4a,4b,5,6,10,10a-decahydro-1,4a-dimethyl-7-(1-methylethyl)-, (1R,4aR,4bR,10aR)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L17 ANSWER 17 OF 17 HCA COPYRIGHT 2004 ACS on STN  
ACCESSION NUMBER: 24:1933 HCA  
ORIGINAL REFERENCE NO.: 24:250h-i,251a-b  
TITLE: Soluble poisons in submarine paints  
AUTHOR(S): Lopez, Manuel  
SOURCE: Quim. ind. (1929), 68, 222-3  
DOCUMENT TYPE: Journal  
LANGUAGE: Unavailable

AB Until quite recently most submarine paints were made with a basis of salt or precipitated poison in suspension in the paints. These paints were not satisfactory for reasons stated. Hg salts were far superior to Cu salts and they were the only 2 classes efficacious. Corrosive sublimate, oxides and calomel were used and Cu arsenite, Cu<sub>2</sub>O and Cu thiocyanate. Inferior paints contained Cu, the better paints Hg. Hg salts are more expensive. Cu thiocyanate is useful, but is expensive, arsenite is fair, while the oxide is useless. The results have not been very satisfactory with any

paints. If the poisons to be used were soluble in the paint vehicle there would be no sedimentation, the exterior of the coat would be permanently poisonous, less poison would be used and the poison would be more efficacious. Hg and Cu oleates, linolates and tungstates may be used. Hg oleate is white, quite soluble in benzine, turpentine white spirit and drying oils. It stays in solution permanently and gives excellent results; only a little need be used and it is very cheap. Cu oleate is green, is economical, satisfactory and cheap. Resinates of abietic acid give good results; they are driers as well as poisons. Hg resinate is a white powder, easily soluble in paint solvents. Cu resinate is a green powder, soluble in paint solvents and its toxic action makes it preferable to most substances hitherto used. Resinates are equal to oleates in toxicity. They are preferred now because they are cheapest and the results are much better than those of earlier paints.

CC 26 (Paints, Varnishes, and Resins)

IT Paint

(antifouling, for ships, etc.)

IT 514-10-3, Abietic acid

(resinates of, as poisons in submarine paints)

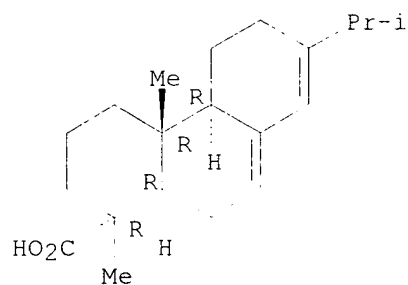
IT 514-10-3, Abietic acid

(resinates of, as poisons in submarine paints)

RN 514-10-3 HCA

CN 1-Phenanthrenecarboxylic acid, 1,2,3,4,4a,4b,5,6,10,10a-decahydro-1,4a-dimethyl-7-(1-methylethyl)-, (1R,4aR,4bR,10aR)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



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